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COVID-19-related attitudes, risk perceptions, preventive behaviours and economic impact in Sub-Saharan African countries: Implementing a longitudinal phone-based survey protocol in rural Senegalese households

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3 **COVID-19-related attitudes, risk perceptions, preventive**
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6 **behaviours and economic impact in Sub-Saharan African**
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9 **countries: Implementing a longitudinal phone-based survey**
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12 **protocol in rural Senegalese households**
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Abstract

Introduction. Rural areas are considered safe havens against the increased spread of COVID-19 and associated restrictive measures, especially in contexts where public authorities are not in a position to systematically and substantially ease COVID-19-induced economic shocks. In the current Sub-Saharan Africa context, still marked by uncertainty surrounding the spread of COVID-19, we present the protocol of an ongoing longitudinal study aimed at investigating COVID-19-related attitudes, risks perceptions, preventive behaviours, and economic impact in rural areas in Senegal.

Methods and analysis. A prospective randomized longitudinal study of 600 households located in three semi-urban villages and nine randomly selected rural villages in the Niakhar area (located 135 km East of Dakar). Three ad hoc phone surveys are administered to 600 heads of households, their housewives in charge of managing the household and a relative living temporarily in the household, respectively. In addition to sharing identical sets of questions on several topics (risks perceptions, attitudes to curfew, attitudes to vaccines, beliefs about COVID-19 infection), the three separate survey questionnaires also include other topics (economic impact, local preventive strategies) whose related questions differ between questionnaires. As analysing evolutions is the study's primary focus, data on all the topics covered will be collected in three waves unless the spread of COVID-19 by mid-2021 justifies extending data collection. The present article presents the study protocol and details about the implementation of the first wave of data collection which started in July 2020. The decision to wait before presenting the protocol was based on the unprecedented context the COVID-19 pandemic.

Ethics and dissemination. The survey's protocol was approved by the Senegalese National Ethical Committee for Research in Health (131/MSAS/CNERS/Sec) and received authorisation from both the Senegalese Ministry of Health (619/MSAS/DPRS/DR) and the French Commission on Information Technology and Liberties (CNIL 2220771).

Keywords: COVID-19; attitudes; risk perceptions; preventive behaviours; economic impact; Sub-Saharan African ; longitudinal ; survey protocol.

Article Summary

- The current Sub-Saharan African (SSA) context is still marked by uncertainty surrounding the spread of the COVID-19 pandemic and the scarce availability of individual data.
- This ongoing longitudinal study aims to investigate COVID-19-related attitudes, risk perceptions, preventive behaviours, and the economic impact in Senegalese rural areas.
- Three waves of data collection are planned (the first wave started in July 2020). However, this number may increase if the spread of COVID-19 by mid-2021 justifies extending data collection over a longer period of time.
- In the unprecedented context of the COVID-19 pandemic, the generalizability of the study's results needs to be explored.

Introduction

After spreading from China to other Asian countries in late 2019, COVID-19 appeared in Western Europe in January 2020 where it rapidly led to overwhelmed hospitals and an exponential increase in deaths (COVID-19 data repository of the Johns Hopkins Center for Systems Science and Engineering, Baltimore, MD, USA). While most European countries adopted lockdown measures only several weeks after the first COVID-19 cases were reported (e.g., a 6-week delay in Italy and a 7-week delay in France), many Sub-Saharan African (SSA) countries decided to act sooner before the outbreak spread.

Spread of COVID-19 still limited in SSA, but uncertainties remain about how the pandemic will evolve

The COVID-19 pandemic spread to SSA in February/March 2020. Senegal implemented restrictive measures (curfew, closing schools, banning of public gatherings, and cancellation of major national and religious celebrations) three weeks after the first COVID-19 cases had been reported in the country, whereas in Nigeria, a street publicity awareness campaign on COVID-19 preventive measures was launched in the capital Lagos, two days after the first cases had been identified. Concerns were expressed, especially in Senegal and Burkina Faso, with respect to the sharp increases in both these countries in the number of COVID-19 cases soon after the first cases were confirmed there ¹.

The announcements of restrictive measures led to mass movements of people from big cities to rural villages, both caused by fear of COVID-19 and the impact it could have in terms of economic losses. However, as time went by, it increasingly appeared that the outbreak was much less devastating than initially anticipated ², and the mass movements of people mentioned above were gradually reversed. Apart from the early adoption of restrictive measures, the most widely proposed hypothesis for the much lower spread of COVID-19 in SSA than in most other world regions is that different demographic characteristics (younger average ages, lower

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3 population densities, and lower urbanization rates)³⁻⁶, and a higher immune response in relation
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5 with more highly solicited immune systems⁷ hamper the spread. Recently, another strong
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7 hypothesis has been put forward, suggesting that the extensive implementation of local
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9 preventive strategies may have played a crucial role in substantially lowering the spread of the
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11 disease^{8,9}.

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15 Nevertheless, the possibility cannot be ruled out that the COVID-19 pandemic could spread
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17 throughout Sub-Saharan African countries^{2,10}, as it did (and still continues to do) in North
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19 African and European countries (i.e. in all the countries north of SSA (Johns Hopkins
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21 Coronavirus world map:
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24 <https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf>

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27 6). Such a development is of great concern because of the associated risk of overwhelming
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29 already fragile healthcare systems^{1,11}, in a context where the pandemic has brought about a
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31 worldwide economic crisis whose consequences might be severe for Sub-Saharan Africa¹².

32 33 34 **Few COVID-19 data are available from an individual perspective**

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36 Most published analyses to date on the COVID-19 pandemic in Sub-Saharan African countries
37
38 have not been supported by collected data, except for data on the numbers of confirmed cases
39
40 and deaths. Nevertheless, two studies assessed COVID-19-related knowledge, attitudes and
41
42 practices in Nigeria, and in both Ghana and South Africa, respectively. An online survey was
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44 used in both studies (April-May 2020 and March-April 2020, respectively). Both showed that
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46 personal COVID-19 prevention measures against COVID-19 and the disease's main symptoms
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48 were well-known by study participants^{13,14}. However, the Nigerian study also showed that
49
50 approximately half of the surveyed individuals believed that only elderly people with
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52 comorbidities were likely to develop severe COVID-19, whereas 85% were unaware of the risk
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54 of being infected by asymptomatic individuals. Consistent with this finding and given that the
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56 participants in the Nigerian study were relatively young (69% aged between 21 and 30 years
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3 old), only 22.5% of surveyed individuals reported wearing a face mask when they went out.
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5 Furthermore, other published studies have emphasized individuals' fear of serious COVID-19-
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7 related economic repercussions (notably people living in urban Ghanaian neighbourhoods with
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9 their own business in the informal economy ¹⁵ and farmers working in the Ethiopian vegetable
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11 sector ¹⁶).

15 **Study Objectives**

17 The present ongoing study was designed in a setting marked by both uncertainty about the
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19 spread of COVID-19 in Sub-Saharan Africa and the scarce availability of individual data. Given
20
21 the continued risk that the spread of COVID-19 will increase substantially in SSA, the memory
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23 of mass movements of people from big cities in March 2020 highlights the role that rural areas
24
25 could play if such an event were to reoccur. This role could be major in a context where public
26
27 authorities may not be in a position to systematically and substantially ease the economic shock
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29 induced by the pandemic¹⁷⁻¹⁹. While this role could evolve depending on rural populations'
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31 attitudes to such mass movements as well as their perceptions of the associated risks, we
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33 hypothesized that evaluating the evolution of individuals' perceived impact of COVID-19
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35 pandemic could provide invaluable information about the potential pressure of the COVID-19
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37 pandemic on these rural areas.
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43 Accordingly, the present ongoing longitudinal study was designed to investigate the attitudes,
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45 risk perceptions and preventive behaviours of people living in a Senegalese rural area in terms
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47 of COVID-19, as well as their perceptions of the related economic impact. As rural areas often
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49 have limited access to the internet and given the increased risk of COVID-19 transmission
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51 during close contact interactions, the only available option was to conduct a phone-based
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53 survey.
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58 **Methods and analysis**

Population

This study includes adults (18 years old and over) living in all 30 villages of the rural Niakhar area covered by the Niakhar Health and Demographic Surveillance System (HDSS)²⁰. The Niakhar HDSS, which is the oldest HDSS in Senegal (created in 1962) and one of the oldest in Western Africa, gathers regular data for the population covered, including demographic and health data. The Niakhar area itself is located 135 km East of Dakar and covers 203 km² with a population of 50 355 inhabitants (January 2018 census). More specifically, it is located in the ‘department’ (an administrative area) of Fatick (there are 45 departments in Senegal) which covers three different healthcare districts (including the Niakhar healthcare district). Most of the population (96.4%) living in this area belongs to the Serere ethnic group. The main economic activity is agriculture with food cultivation (millet) and a cash crop (peanuts), in addition to small-scale cattle breeding.

Representativeness of Niakhar area with respect to COVID-19

As the Niakhar area has been a site for research for several years, especially for infectology and epidemiology of infectious diseases, including malaria, meningitis and hepatitis²⁰, the question arises as to how much the people living in the area are still truly representative of other Senegalese rural populations, especially regarding their knowledge of diseases that have long been studied there. However, given that COVID-19 is a new disease, we hypothesized that the Niakhar healthcare district would likely be comparable with other such districts in the country with a similar population density, age distribution and poverty index²¹.

To assess this hypothesis, we performed a multivariable Poisson regression on the numbers of confirmed COVID-19 cases at the district level (Senegalese Minister of Health: <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas>). While standardized residuals represent variations in the data that cannot be explained by the model, residual plots enabled us to identify outliers (see

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2
3 Appendix 1). As a result, the Niakhar healthcare district could not be considered an outlier in
4 terms of the number of declared cases of COVID-19 (standardized residuals= -0.53).
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6 Furthermore, at the time the study began, the prevalence of COVID-19 in the department of
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8 Fatick was comparable with that in other Senegalese departments with similar population
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10 densities (Figure 1).
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14 15 **Study design and procedure**

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17 Study participants were randomly selected using a two-stage stratified sampling design. All 30
18
19 villages in the Niakhar area were previously identified as rural (n=27) or semi-urban villages
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21 (n=3), depending on their infrastructure and equipment ²⁰. The participating villages selected in
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23 the first stage (n=12) of the present study comprised the three semi-urban villages and a simple
24
25 random sample of nine rural villages. In the second stage of sampling, 600 households from all
26
27 the 1756 households in these 12 participating villages were selected, again using simple random
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29 sampling.
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34 This figure of 600 households was not arrived at from a calculation to determine the optimal
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36 number of households to be included, but was the result of a trade-off between the budgetary
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38 and logistic constraints of surveying up to three members in each household (i.e., a potential
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40 maximum of 1800 individuals) in three successive waves of data collection (the first wave
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42 started on July 27, 2020). An attrition rate of 15% was anticipated, resulting in an estimated
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44 500 surveyed households by the end of the third wave (scheduled for mid-2021). In the planned
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46 analyses, potential selection bias will be assessed and reduced by using sampling weights
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48 computed as reciprocals of the probabilities of selection of each household. Final weights will
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50 be calculated using an iterative process (ranking ratio estimation) involving sociodemographic
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52 data collected regularly by the Niakhar HDSS.
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57 **Longitudinal phone survey in multi-adult households**

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3 Data collection is expected to last at least until end-2021, unless the spread of COVID-19 at
4 that time justifies extending data collection. The study is funded until March 2022 (Inserm-
5 ANRS, grant number ECTZ147735). Given that any application for funding for possible
6 subsequent waves of data collection needs to occur well in advance, the decision about this
7 issue has been postponed until mid-2021. For each wave, data are collected by surveying
8 participants over their mobile phone. Participants' telephone numbers were recorded by
9 community health workers (Badjanou Gokh) prior to the first survey. Phone interviews are
10 conducted using Computer assisted telephone interviews (CATI) software. To achieve higher
11 response rates, 15 calls (1 initial and 14 callbacks) are planned at different times of the day and
12 on different days before discarding a non-responsive telephone number.
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26 The COVID-19 sanitary context makes the implementation of the survey at each wave and the
27 collection of data more complex than usual. Although this study protocol was the result of a
28 close collaboration between Senegalese and French researchers, travelling restrictions
29 prevented some of the latter from being physically present for the training of the CATI
30 interviewers, for data collection preparatory meetings, for field meetings and for feedback
31 sessions. Accordingly, the Senegalese research team is in charge of coordinating data collection
32 and organizing CATI schedules, although regular internet-based meetings with the French
33 research team ensure joint decision-making.
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46 The lack of the possibility to train interviewers up on CATI in Senegal because of the
47 international travel restrictions meant that only experienced bilingual (French and Serere)
48 interviewers already present in Senegal could administer the CATI surveys. As Serere is an oral
49 only language, practice sessions to administer the questionnaires were performed by the
50 interviewers in order to reach a consensus on the specific words to be used when performing
51 the interviews in Serere. Consequently, the relevance and ease of understanding of each
52 questionnaire item was assessed before the interviews took place in Serere. A total of seven
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3 interviewers collected data in the first wave. They were supervised by another senior
4 interviewer whose specific role, in addition to supervision, was to share feedback on data
5 collection with the two (Senegalese and French) research teams. In many aspects, the data
6 collection process greatly benefits from long-term existing experience the interviewers have in
7 administering research-based surveys.
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15 **Data collection**

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17 The first data collection wave began on July 27, 2020 and interviewing lasted six weeks.
18 Furthermore, parallel data collection about local preventive strategies implemented in villages
19 since July 2020 is about to be completed. Figure 2 summarizes the major steps of data collection
20 and presents the study sample to be followed in our longitudinal design.
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27 For the first wave, phone interviews took place with three different persons in each participating
28 household as follows: the head of the household, his wife (for those who had more than one
29 wife, the wife responsible for managing the household), and a relative from a city who had
30 decided to come and live momentarily in the rural household because of the risk of COVID-19
31 and the fear of associated economic consequences. Specifically, heads of households had to
32 decide which wife and which temporary visiting relative would be surveyed, and to provide
33 their names and mobile phone numbers during the first phone interview. When interviewing
34 heads of households, their designated wives and visiting relatives on their mobile phones, the
35 interviewers first presented the study and informed them about its longitudinal design, obtained
36 their consent to participate, and then interviewed them. As a way of thanking households for
37 their participation, the community health workers provided them with a personal protection kit
38 including hydroalcoholic gel and a face mask at the end of the first wave of data collection.
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55 As regards relatives temporarily living in the household, those individuals interviewed in the
56 first wave of data collection will be surveyed in successive waves. New visiting relatives
57 identified between two different waves of data collection will also be included in the study
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3 design by interviewing them in all data collection waves subsequent to their inclusion. As we
4 wanted to ensure that our study design and protocol were feasible given current national and
5 international restrictive measures due to COVID-19, we chose to wait until the first wave of
6 data collection neared completion before presenting the study design here.
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10 11 12 13 **Questionnaires**

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15 Three questionnaires were constructed (one each) for the heads of the selected households, their
16 designated wives in charge of managing the household, and their designated relative
17 temporarily living with them. In addition to sharing identical sets of questions on several topics
18 (risks perceptions, attitudes to curfew, attitudes to vaccines, beliefs about COVID-19 infection),
19 the three separate survey questionnaires also contain other questions on other topics (economic
20 impact, local preventive strategies). These questions differ between questionnaires. For
21 example, with regard to local preventive strategies, household heads are asked about the local
22 COVID-19 prevention strategies implemented in their village, while their wives are asked about
23 anti-COVID-19 private prevention measures in the household, and newcomers about personal
24 preventive measures in the household and possibly asked to implement when they first arrived
25 (e.g., quarantine). While this study involves collecting data at different moments in time, the
26 same topics and associated sets of questions presented below will be used throughout the study
27 in order to evaluate evolutions.
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45 46 **Measures**

47 48 ***Sociodemographic characteristics***

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50 As the study's framework provides for collected data to be matched with existing data in the
51 Niakhar HDSS ²⁰ database, only individual sociodemographic data needs to be collected during
52 the telephone interviews, including marital status, educational level, number of children, the
53 latter's ages and type of schooling (public or religious school), as well as the respondent's level
54 of access to the internet. With regard to employment at the time of the survey, participants are
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3 invited to answer open-ended questions whose responses are consequently recoded into nine
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5 different standard categories (Farmers, Craftsmen, Workers, Employees, Intermediate
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7 professions, Managers and higher intellectual professions, Students, Pensioners, Not engaged
8
9 in active employment).

13 ***Risk perceptions***

15 Collecting data on the perceived risks of COVID-19 is of crucial importance in understanding
16
17 individuals' related attitudes and behaviours. In line with previous survey studies, the
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19 assessment of risk perceptions in the present study involves collecting information on
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21 introspective judgements^{22,23}. After asking surveyed individuals whether they have heard about
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23 COVID-19 pandemic before being surveyed, an assessment is performed using a scale from 0
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25 (not at all) to 10 (extremely) to measure how worried they are about getting the disease, and
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27 how contagious and severe they perceive it to be²⁴. In addition, perceived mortality of COVID-
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29 19 is assessed based on a question about what the participant believes will be the number of
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31 deaths out of every 100 people with COVID-19. To provide greater insight into participants'
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33 COVID-19 risk perceptions, all the questions mentioned above are asked again for malaria, a
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35 well-known and common viral infection in Sub-Saharan African countries which also starts
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37 with flu-like symptoms.

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39 Finally, respondents are invited to self-assess their perceived absolute and relative risks of
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41 COVID-19 infection²⁵ by ranking their level of self-perceived risk (four-point Likert scale
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43 from "very low" (=1) to "very high" (=4)) and by positioning their own perceived risks with
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45 respect to others of the same age and gender (five-point Likert scale from "much lower" (=1)
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47 to "much higher" (=5)). The questionnaires also include items measuring the extent of the
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49 respondent's fear that the visiting relative is unknowingly infected with COVID-19 and
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51 asymptomatic.
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3 Other questionnaire items assessing risk perceptions include asking heads of households (/their
4 surveyed wife) to adopt their spouse's perspective and to report the extent to which they believe
5 their spouse is worried about COVID-19. Similarly, both individuals are asked to report the
6 extent to which they believe their spouse perceives that she (/he) is at risk of COVID-19 and
7 how she (/he) places this level of perceived risk in relation to that of other wives (/husbands) of
8 the same age and gender. Accounting for the potential impact of respondents' current health
9 state on their perceived risks, respondents are asked how they feel in terms of their state of
10 health at the time of the survey (eleven-point Likert scale from "very poor" (=0) to "very well"
11 (=10)).
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25 ***Attitudes***

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27 Given the unprecedented context of COVID-19 pandemic, assessing individual attitudes to the
28 disease necessitates using ad-hoc questions. Considering the restrictive measures adopted in
29 Senegal from March 2020 onward, attitudes to curfews in general, whether implemented in
30 rural or urban areas are assessed in the present study. With regard to health issues, surveyed
31 individuals are invited to report how worried they are about buying counterfeit drugs, their
32 attitudes to vaccination in general and to (unavailable at the time of the first wave of data
33 collection) the anti-COVID-19 vaccine. In addition, participants are asked whether they would
34 consider having anti-COVID-19 vaccine for themselves and for their children if it were free of
35 charge (four-point Likert scale from "certainly yes" (=1) to "definitely not" (=4) in all cases).
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37 Finally, individuals' agreement (agree/disagree) is assessed regarding statements circulating on
38 the internet and reflecting rumour-related fake information on COVID-19 transmission and
39 cure.
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54 ***Preventive behaviours***

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56 It has been recently suggested that locally implemented COVID-19 preventive strategies could
57 potentially explain, at least in part, the as yet slow spread of COVID-19 in SSA ^{8 9}. The present
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3 study collected data which could shed some more light on this issue. In our ongoing longitudinal
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5 study, preventive behaviours cover individual protection measures by the study's participants
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7 and collective prevention strategies implemented by administrative, religious or medical
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9 authorities in the area covered by the survey. With regard to the former, the study's
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11 questionnaires include items measuring how much the COVID-19 pandemic had led to changes
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13 in everyday life in the participating households, in changes in journeys to and from the local
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15 market or the closest city, and in changes in the way relatives from cities are welcomed,
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17 especially in terms of possible quarantine upon their arrival. In order to compare participant
18
19 recall with objective data on locally implemented collective preventive strategies, from the
20
21 outset of the study, specific data has been gathered to document the dates, duration and nature
22
23 of all collective actions implemented by local authorities in the study's 12 study villages. These
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25 data will continue to be collected over the whole data collection period.
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30 31 ***Economic impact on everyday life*** 32

33 One primary concern about the spread of COVID-19 in Sub-Saharan African countries is a
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35 possible resulting economic shock^{12 17-19}. Supposing that urban areas would most likely be the
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37 first to be highly impacted by the COVID-19 pandemic, rural areas could indeed be in position
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39 to soften, at least in part, the economic consequences of COVID-19 pandemic. In this respect,
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41 our ongoing study assesses the pandemic's impact with questions about the main
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43 sociodemographic characteristics of relatives from cities currently living in the household
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45 because of COVID-19, and questions about the perceived burden on the rural household (e.g.,
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47 having to provide food for more people) as well as the benefits (e.g., larger labour force for
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49 agricultural work) associated with their arrival in the household. In addition, the study examines
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51 possible assistance from administrative authorities or neighbours locally implemented, as well
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53 as possible assistance given to neighbours because of the COVID-19 pandemic. Furthermore,
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55 possible COVID-19 pandemic-related financial difficulties are explored concerning everyday
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3 purchases and sales of crops in local markets. Finally, relatives from cities temporarily living
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5 in the household because of their fear of COVID-19 and induced economic losses are asked to
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7 self-assess the extent to which the pandemic has impacted their own life as well as everyday
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9 life in the household. In terms of financial support provided to the household, heads of
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11 households are asked about those relatives currently living with them and whether these
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13 relatives provided support before they arrived to temporarily stay. Similarly, they are asked
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15 about the extent to which relatives who left the household to go back to cities currently
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17 financially support the household.
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22 **Ethics and dissemination**

23
24 COVID-19 is currently (as of February 2021) spreading relatively slowly in SSA although a
25
26 sharp increase in its spread cannot be excluded. Given the current context, the present ongoing
27
28 longitudinal study protocol aims to provide data on the attitudinal, behavioural and economic
29
30 consequences of the disease in a rural area in Senegal at a time when very few data are available.
31
32 Since rural areas may likely be seen as safe refuges, our study collects data from heads of rural
33
34 households, their wives (in charge of managing the household) and relatives who leave cities
35
36 to temporarily live in these households, specifically because of the COVID-19 pandemic. The
37
38 study protocol was approved by the Senegalese National Ethical Committee for Research in
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40 Health (131/MSAS/CNERS/Sec) and received authorisation from the Senegalese Ministry of
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42 Health (619/MSAS/DPRS/DR) and the French Commission on Information Technology and
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44 Liberties (CNIL 2220771).
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51 As regards the COVID-19 preventive strategies implemented at the village and household
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53 levels, it is possible that the experience gained from the Ebola and HIV/AIDS pandemics have
54
55 helped in managing the risk of COVID-19¹⁰. In the present study, we hypothesize that accurate
56
57 recall of local prevention strategies currently in place is higher in villages with more prevention
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59 strategies implemented. We also hypothesized that implementing preventive strategies at the
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3 village level might have a positive impact on adopting strategies at the household level.
4
5 Exploring the relationship between collective and individual preventive behaviours could be
6
7 very useful to evaluate the impact of locally implemented prevention measures on slowing the
8
9 spread of COVID-19. Using prospectively collected data, the dynamics of this relationship can
10
11 therefore be analysed over time with respect to attitudes and risk perceptions.
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15 To conclude, this ongoing study benefits greatly from close previously established research
16
17 relationships between the researchers and the interviewers involved. Now that data collection
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19 for the first wave is nearing completion, and that data collection has been proven to be feasible
20
21 despite COVID-19 restrictions, we believe that the primary benefit of our longitudinal design
22
23 will be to provide data which could help to analyse evolutions in risk perceptions, attitudes, and
24
25 preventive behaviours of the disease, as well as its economic impact on everyday lives.
26
27

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40

41 42 43 **Group Information**

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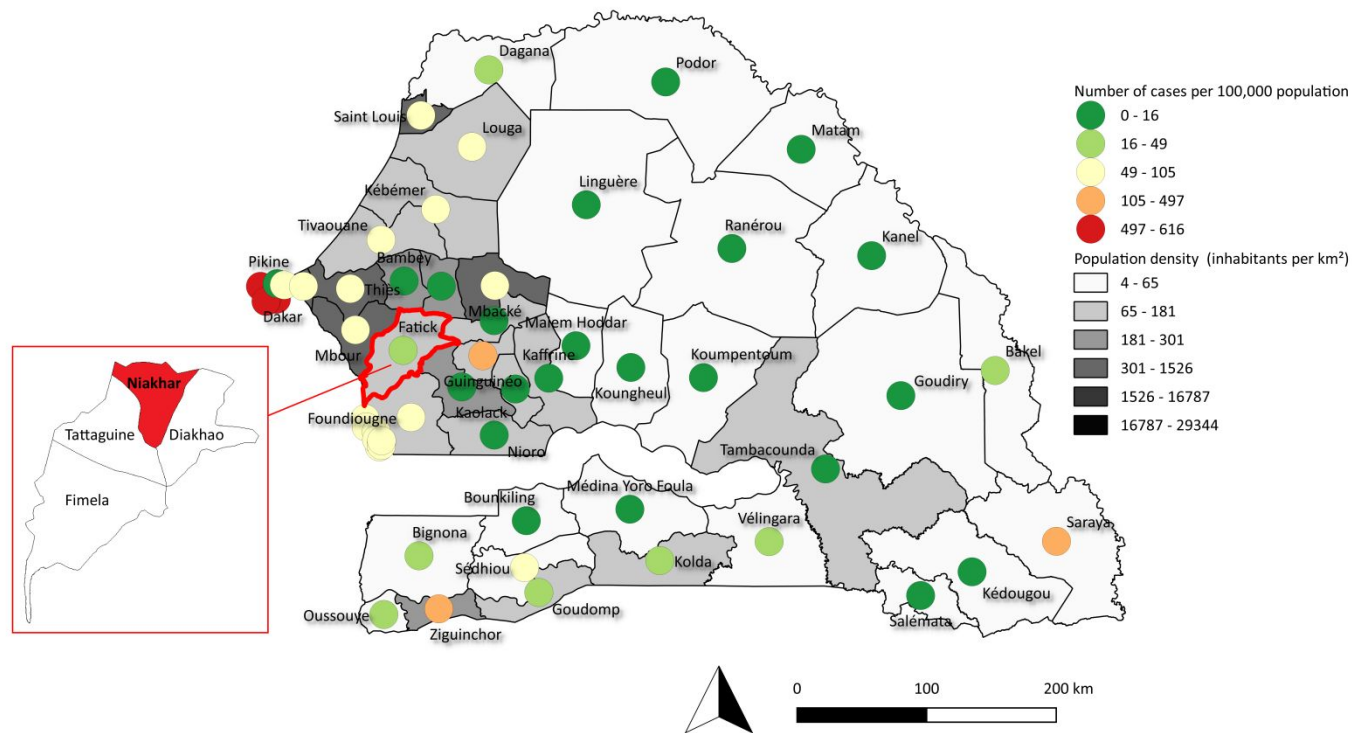
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2
3 **Authors' contributions:** VS and CS conceptualised the study and obtained funding. GM, E-
4 HB, OLH and SC contributed to the development of the study design. GM, E-HB, and CB were
5 responsible for the development of the data collection platform, field testing of the study
6 logistics, and participant recruitment. VS, CS, GM, OLH and SC drafted the first version of the
7 manuscript. All authors read, edited and approved the final version.
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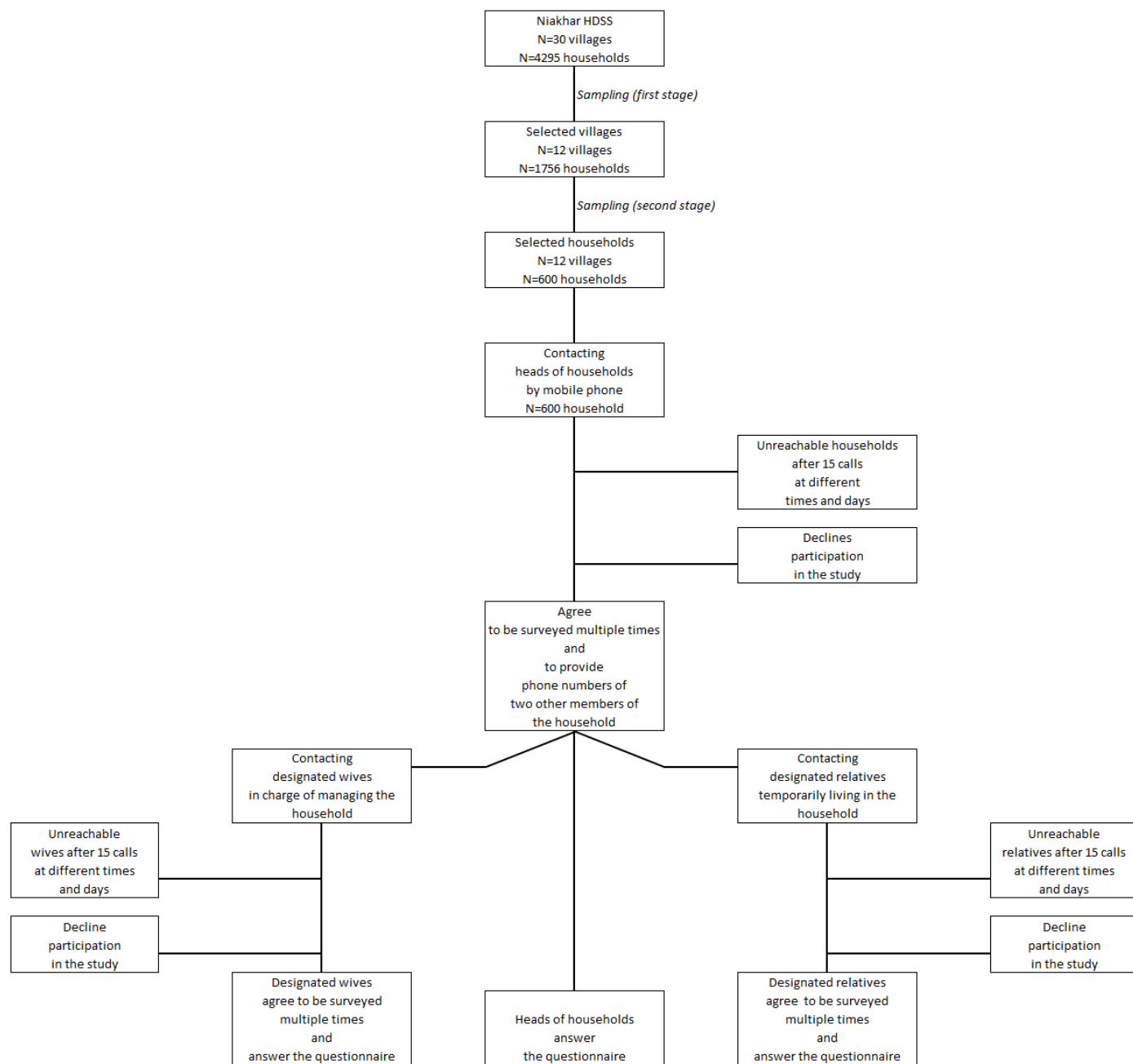
Figure 1. Number of COVID-19 confirmed cases at the department level (n=45)



Source: <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas>; data accessed on November 26, 2020.

Note: The administrative ‘department’ of Fatick covers different healthcare districts, including the Niakhar healthcare district).

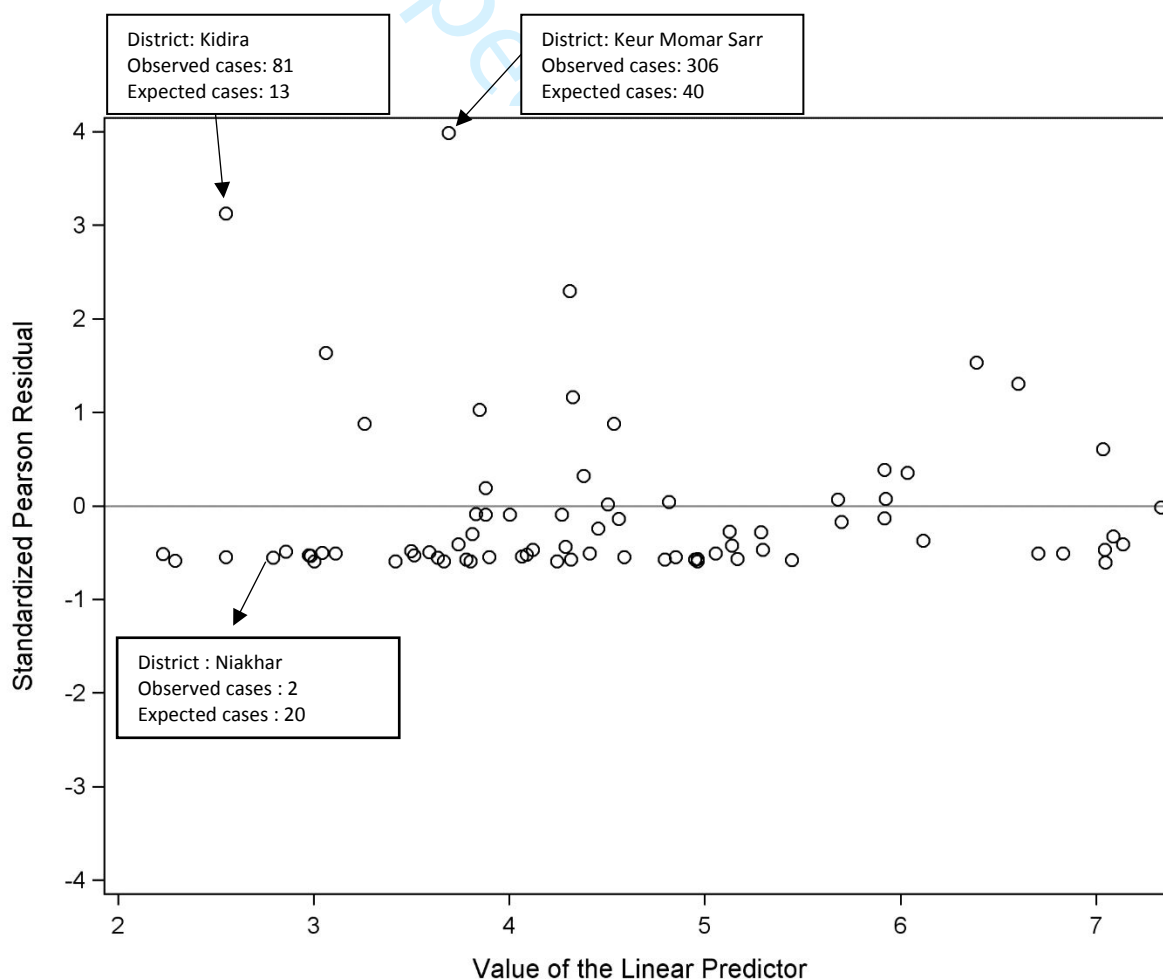
Figure 2. Study flow diagram



Note: Mobile phone numbers provided by community health workers (Badjanou Gokh).

Appendix 1. Multivariable Poisson regression at the district level and residual dependence plot (n=79).

- Outcome: number of confirmed COVID-19 cases at the healthcare district level (data accessed on November 26, 2020: <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas>)
- Offset: total population of the healthcare district
- Covariates:
 - Urbanization rates (%)
 - Poverty index (%)
 - Rates of people aged 50 and older (%)



BMJ Open

COVID-19-related attitudes, risk perceptions, preventive behaviours and economic impact in Sub-Saharan African countries: Implementing a longitudinal phone-based survey protocol in rural Senegalese households

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Primary Subject Heading:	Public health
Secondary Subject Heading:	Global health, Health economics
Keywords:	COVID-19, Public health < INFECTIOUS DISEASES, PUBLIC HEALTH, TROPICAL MEDICINE, HEALTH ECONOMICS

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COVID-19-related attitudes, risk perceptions, preventive behaviours and economic impact in Sub-Saharan African countries: Implementing a longitudinal phone-based survey protocol in rural Senegalese households

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Abstract

Introduction. Rural areas are considered safe havens against the increased spread of COVID-19 and associated restrictive measures, especially in contexts where public authorities are not in a position to systematically and substantially ease COVID-19-induced economic shocks. In the current Sub-Saharan Africa context, still marked by uncertainty surrounding the spread of COVID-19, we present the protocol of an ongoing longitudinal study aimed at investigating COVID-19-related attitudes, risks perceptions, preventive behaviours, and economic impact in rural areas in Senegal.

Methods and analysis. A prospective randomized longitudinal study of 600 households located in three semi-urban villages and nine randomly selected rural villages in the Niakhar area (located 135 km East of Dakar). Three ad hoc phone surveys are administered to 600 heads of households, their housewives in charge of managing the household and a relative living temporarily in the household, respectively. In addition to sharing identical sets of questions on several topics (risks perceptions, attitudes to curfew, attitudes to vaccines, beliefs about COVID-19 infection), the three separate survey questionnaires also include other topics (economic impact, local preventive strategies) whose related questions differ between questionnaires. As analysing evolutions is the study's primary focus, data on all the topics covered will be collected in three waves unless the spread of COVID-19 by mid-2021 justifies extending data collection. The present article presents the study protocol and details about the implementation of the first wave of data collection which started in July 2020. The decision to wait before presenting the protocol was based on the unprecedented context the COVID-19 pandemic.

Ethics and dissemination. The survey's protocol was approved by the Senegalese National Ethical Committee for Research in Health (131/MSAS/CNERS/Sec) and received authorisation from both the Senegalese Ministry of Health (619/MSAS/DPRS/DR) and the French Commission on Information Technology and Liberties (CNIL 2220771).

Keywords: COVID-19; attitudes; risk perceptions; preventive behaviours; economic impact; Sub-Saharan African ; longitudinal ; survey protocol.

Article Summary

- The current Sub-Saharan African (SSA) context is still marked by uncertainty surrounding the spread of the COVID-19 pandemic and the scarce availability of individual data.
- This ongoing longitudinal study aims to investigate COVID-19-related attitudes, risk perceptions, preventive behaviours, and the economic impact in Senegalese rural areas.
- Three waves of data collection are planned (the first wave started in July 2020). However, this number may increase if the spread of COVID-19 by mid-2021 justifies extending data collection over a longer period of time.
- In the unprecedented context of the COVID-19 pandemic, the generalizability of the study's results needs to be explored.

Introduction

After spreading from China to other Asian countries in late 2019, COVID-19 appeared in Western Europe in January 2020 where it rapidly led to overwhelmed hospitals and an exponential increase in deaths (COVID-19 data repository of the Johns Hopkins Center for Systems Science and Engineering, Baltimore, MD, USA). While most European countries adopted lockdown measures only several weeks after the first COVID-19 cases were reported (e.g., a 6-week delay in Italy and a 7-week delay in France), many Sub-Saharan African (SSA) countries decided to act sooner before the outbreak spread.

Spread of COVID-19 still limited in SSA, but uncertainties remain about how the pandemic will evolve

The COVID-19 pandemic spread to SSA in February/March 2020. Senegal implemented restrictive measures (curfew, closing schools, banning of public gatherings, and cancellation of major national and religious celebrations) three weeks after the first COVID-19 cases had been reported in the country, whereas in Nigeria, a street publicity awareness campaign on COVID-19 preventive measures was launched in the capital Lagos, two days after the first cases had been identified. Concerns were expressed, especially in Senegal and Burkina Faso, with respect to the sharp increases in both these countries in the number of COVID-19 cases soon after the first cases were confirmed there ¹.

The announcements of restrictive measures led to mass movements of people from big cities to rural villages, both caused by fear of COVID-19 and the impact it could have in terms of economic losses. However, as time went by, it increasingly appeared that the outbreak was much less devastating than initially anticipated ², and the mass movements of people mentioned above were gradually reversed. Apart from the early adoption of restrictive measures, the most widely proposed hypothesis for the much lower spread of COVID-19 in SSA than in most other world regions is that different demographic characteristics (younger average ages, lower

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3 population densities, and lower urbanization rates)³⁻⁶, and a higher immune response in relation
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5 with more highly solicited immune systems⁷ hamper the spread. Recently, another strong
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7 hypothesis has been put forward, suggesting that the extensive implementation of local
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9 preventive strategies may have played a crucial role in substantially lowering the spread of the
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11 disease^{8,9}.

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15 Nevertheless, the possibility cannot be ruled out that the COVID-19 pandemic could spread
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17 throughout SSA countries^{2,10}, as it did (and still continues to do) in North African and European
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19 countries (i.e., all the countries north of SSA (see the Johns Hopkins Coronavirus world map:
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21 <https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf>
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23 6)). Such a development is of great concern because of the associated risk of overwhelming
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25 already fragile healthcare systems^{1,11} in a context where the pandemic has brought about a
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27 worldwide economic crisis whose consequences might be severe for SSA¹².

31 32 **Few COVID-19 data are available from an individual perspective**

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34 Most published analyses to date on the COVID-19 pandemic in SSA countries have not been
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36 supported by collected data, except for data on the numbers of confirmed cases and deaths. One
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38 study conducted in seven English-speaking countries (Ghana, Kenya, South Africa, Tanzania,
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40 Uganda and the English-speaking regions of Cameroon) assessed the extent to which these
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42 populations were exposed to COVID-19-related misinformation. Using an online survey (April-
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44 May 2020), it showed that false beliefs were shared by between 15 and 30% of the respondents,
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46 depending on the false statement assessed, with a higher likelihood of false beliefs in older and
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48 unemployed respondents¹³. In addition, three studies assessed COVID-19-related knowledge,
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50 attitudes and practices in Nigeria, in Ghana/South Africa, and in the Republic of Chad (April-
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52 May 2020, March-April 2020, and May-August 2020, respectively) using online surveys. All
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54 three showed that study participants were very familiar with personal preventive measures
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56 against COVID-19 and the disease's main symptoms¹⁴⁻¹⁶. However, the Nigerian study also
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3 showed that approximately half of the surveyed individuals believed that only elderly people
4 with comorbidities were likely to develop severe COVID-19, and 85% were unaware of the risk
5 of being infected by asymptomatic individuals. Consistent with this finding and given that the
6 participants in the Nigerian study were relatively young (69% aged between 21 and 30 years
7 old), only 22.5% of surveyed individuals reported wearing a face mask when they went out ¹⁴.
8
9 More generally, the study conducted in the Republic of Chad showed significantly lower uptake
10 of preventive practices in individuals with lower educational levels and precarious employment
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12 ¹⁶. Furthermore, other published studies emphasized individuals' fear of serious COVID-19-
13 related economic repercussions (notably people living in urban Ghanaian neighbourhoods with
14 their own business in the informal economy ¹⁷ and farmers working in the Ethiopian vegetable
15 sector ¹⁸).

28 29 **Study Objectives**

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31 The present ongoing study was designed in a setting marked by both uncertainty about the
32 spread of COVID-19 in Sub-Saharan Africa and the scarce availability of individual data. Given
33 the continued risk that the spread of COVID-19 will increase substantially in SSA, the memory
34 of mass movements of people from big cities in March 2020 highlights the role that rural areas
35 could play if such an event were to reoccur. This role could be major in a context where public
36 authorities may not be in a position to systematically and substantially ease the economic shock
37 induced by the pandemic¹⁹⁻²¹. While this role could evolve depending on rural populations'
38 attitudes to such mass movements and their perceptions of the associated risks, we hypothesized
39 that evaluating the evolution of individuals' perceived impact of COVID-19 pandemic could
40 provide invaluable information about the potential pressure of the COVID-19 pandemic on
41 these rural areas.
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57 Accordingly, the present ongoing longitudinal study was designed to investigate the attitudes,
58 risk perceptions and preventive behaviours of people living in a Senegalese rural area in terms
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3 of COVID-19, as well as their perceptions of the related economic impact. As rural areas often
4 have limited access to the internet and given the increased risk of COVID-19 transmission
5 during close contact interactions, the only available option was to conduct a phone-based
6 survey.
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13 **Methods and analysis**

14 **Population**

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16 This study includes adults (18 years old and over) living in all 30 villages of the rural Niakhar
17 area covered by the Niakhar Health and Demographic Surveillance System (HDSS) ²². The
18 Niakhar HDSS, which is the oldest HDSS in Senegal (created in 1962) and one of the oldest in
19 Western Africa, gathers regular data for the population covered, including demographic and
20 health data. The Niakhar area itself is located 135 km East of Dakar and covers 203 km² with
21 a population of 50 355 inhabitants (January 2018 census). More specifically, it is located in the
22 ‘department’ (an administrative area) of Fatick (there are 45 departments in Senegal) which
23 covers three different healthcare districts (including the Niakhar healthcare district). Most of
24 the population (96.4%) living in this area belongs to the Serere ethnic group. The main
25 economic activity is agriculture with food cultivation (millet) and a cash crop (peanuts), in
26 addition to small-scale cattle breeding.
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44 **Representativeness of Niakhar area with respect to COVID-19**

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46 As the Niakhar area has been a site for research for several years, especially for infectology and
47 epidemiology of infectious diseases, including malaria, meningitis and hepatitis ²², the question
48 arises as to how much the people living in the area are still truly representative of other
49 Senegalese rural populations, especially regarding their knowledge of diseases that have long
50 been studied there. However, given that COVID-19 is a new disease, we hypothesized that the
51 Niakhar healthcare district would likely be comparable with other such districts in the country
52 with a similar population density, age distribution and poverty index ²³.
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3 To assess this hypothesis, we performed a multivariable Poisson regression on the numbers of
4 confirmed COVID-19 cases at the district level (Senegalese Minister of Health:
5 <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations->
6 [http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-](http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas)
7 [officielles-et-quotidiennes-du-msas](http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas)). While standardized residuals represent variations in the
8 data that cannot be explained by the model, residual plots enabled us to identify outliers (Figure
9 2). As a result, the Niakhar healthcare district could not be considered an outlier in terms of the
10 number of declared cases of COVID-19 (standardized residuals= -0.53). Furthermore, at the
11 time the study began, the prevalence of COVID-19 in the department of Fatick was comparable
12 with that in other Senegalese departments with similar population densities (Figure 1).

23 **Study design and procedure**

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25 Study participants were randomly selected using a two-stage stratified sampling design. All 30
26 villages in the Niakhar area were previously identified as rural (n=27) or semi-urban villages
27 (n=3), depending on their infrastructure and equipment ²². More specifically, unlike rural
28 villages, the three semi-urbanised villages have health facilities, a weekly market, daily buses
29 to the Senegal's capital Dakar, and several shops. The participating villages selected in the first
30 stage (n=12) of the present study comprised the three semi-urban villages and a simple random
31 sample of nine rural villages. In the second stage of sampling, 600 households from all the 1756
32 households in these 12 participating villages were selected, again using simple random
33 sampling.

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35 This figure of 600 households was not arrived at from a calculation to determine the optimal
36 number of households to be included, but was the result of a trade-off between the budgetary
37 and logistic constraints of surveying up to three members in each household (i.e., a potential
38 maximum of 1800 individuals) in three successive waves of data collection (the first wave
39 started on July 27, 2020). Taking into account the design of previous surveys conducted in the
40 same area ²⁴, we assumed a response rate of 90% for the first wave of data collection and an
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3 attrition rate of 15% over the data collection period, resulting in an estimated 500 surveyed
4 households by the end of the third wave (scheduled for mid-2021). In the planned analyses,
5 potential selection bias will be assessed and reduced by using sampling weights computed as
6 reciprocals of the probabilities of selection of each household. Final weights will be calculated
7 using an iterative process (ranking ratio estimation) involving sociodemographic data collected
8 regularly by the Niakhar HDSS.
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16 17 **Longitudinal phone survey in multi-adult households**

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19 Data collection is expected to last at least until end-2021, unless the spread of COVID-19 at
20 that time justifies extending data collection. The study started in March 2020 and it is funded
21 until March 2022 (Inserm-ANRS, grant number ECTZ147735). Given that any application for
22 funding for possible subsequent waves of data collection needs to occur well in advance, the
23 decision about this issue has been postponed until mid-2021. For each wave, data are collected
24 by surveying participants over their mobile phone. Participants' telephone numbers were
25 recorded by community health workers (locally called *Badjanou Gokh*) prior to the first survey.
26 Phone interviews are conducted using Computer assisted telephone interviews (CATI)
27 software. To achieve higher response rates, 15 calls (1 initial and 14 callbacks) are planned
28 during the several weeks of data collection, at different times of the day and on different days,
29 before discarding a non-responsive telephone number. While 12 to 15 calls and 6 to 10 calls are
30 generally recommended for landline and mobile CATI surveys respectively ²⁵, we opted for a
31 maximum of 15 calls given the frequency of poor telephone connections in the area.
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50 The COVID-19 sanitary context makes the implementation of the survey at each wave and the
51 collection of data more complex than usual. Although this study protocol was the result of a
52 close collaboration between Senegalese and French researchers, travelling restrictions
53 prevented some of the latter from being physically present for the training of the CATI
54 interviewers, for data collection preparatory meetings, for field meetings and for feedback
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3 sessions. Accordingly, the Senegalese research team is in charge of coordinating data collection
4 and organizing CATI schedules, although regular internet-based meetings with the French
5 research team ensure joint decision-making.
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10 The lack of the possibility to train interviewers up on CATI in Senegal because of the
11 international travel restrictions meant that only experienced bilingual (French and Serere)
12 interviewers already present in Senegal could administer the CATI surveys. As Serere is an oral
13 only language, practice sessions to administer the questionnaires were performed by the
14 interviewers in order to reach a consensus on the specific words to be used when performing
15 the interviews in Serere. Consequently, the relevance and ease of understanding of each
16 questionnaire item was assessed before the interviews took place in Serere. A total of seven
17 interviewers collected data in the first wave. They were supervised by another senior
18 interviewer whose specific role, in addition to supervision, was to share feedback on data
19 collection with the two (Senegalese and French) research teams. In many aspects, the data
20 collection process greatly benefits from long-term existing experience the interviewers have in
21 administering research-based surveys.
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39 **Data collection**

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41 The first data collection wave began on July 27, 2020 and interviewing lasted six weeks.
42 Furthermore, parallel data collection about local preventive strategies implemented in villages
43 since July 2020 is about to be completed. Figure 3 summarizes the major steps of data collection
44 and presents the study sample to be followed in our longitudinal design.
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51 For the first wave, phone interviews took place with three different persons in each participating
52 household as follows: the head of the household, his wife (for those who had more than one
53 wife, the wife responsible for managing the household), and a relative from a city who had
54 decided to come and live momentarily in the rural household because of the risk of COVID-19
55 and the fear of associated economic consequences. Specifically, heads of households had to
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3 decide which wife and which temporary visiting relative would be surveyed, and to provide
4 their names and mobile phone numbers during the first phone interview. When interviewing
5 heads of households, their designated wives and visiting relatives on their mobile phones, the
6 interviewers first presented the study and informed them about its longitudinal design, obtained
7 their consent to participate, and then interviewed them. As a way of thanking households for
8 their participation, the community health workers provided them with a personal protection kit
9 including hydroalcoholic gel and a face mask at the end of the first wave of data collection.

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20 As regards relatives temporarily living in the household, those individuals interviewed in the
21 first wave of data collection will be surveyed in successive waves. New visiting relatives
22 identified between two different waves of data collection will also be included in the study
23 design by interviewing them in all data collection waves subsequent to their inclusion. As we
24 wanted to ensure that our study design and protocol were feasible given current national and
25 international restrictive measures due to COVID-19, we chose to wait until the first wave of
26 data collection neared completion before presenting the study design here.

27 28 29 30 31 32 33 34 35 36 37 **Questionnaires**

38 Three questionnaires were constructed (one each) for the heads of the selected households, their
39 designated wives in charge of managing the household, and their designated relative
40 temporarily living with them (Supplementary file 1, 2 and 3, respectively). In addition to
41 sharing identical sets of questions on several topics (risks perceptions, attitudes to curfew,
42 attitudes to vaccines, beliefs about COVID-19 infection), the three separate survey
43 questionnaires also contain other questions on other topics (economic impact, local preventive
44 strategies). These questions differ between questionnaires. For example, with regard to local
45 preventive strategies, household heads are asked about the local COVID-19 prevention
46 strategies implemented in their village, while their wives are asked about anti-COVID-19
47 private prevention measures in the household, and newcomers about personal preventive
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3 measures in the household and possibly asked to implement when they first arrived (e.g.,
4 quarantine). While this study involves collecting data at different moments in time, the same
5 topics and associated sets of questions presented below will be used throughout the study in
6 order to evaluate evolutions.
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13 **Measures**

14 *Sociodemographic characteristics*

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16 As the study's framework provides for collected data to be matched with existing data in the
17 Niakhar HDSS ²² database, only individual sociodemographic data needs to be collected during
18 the telephone interviews, including marital status, educational level, number of children, the
19 latter's ages and type of schooling (public or religious school), as well as the respondent's level
20 of access to the internet. With regard to employment at the time of the survey, participants are
21 invited to answer open-ended questions whose responses are consequently recoded into nine
22 different standard categories (Farmers, Craftsmen, Workers, Employees, Intermediate
23 professions, Managers and higher intellectual professions, Students, Pensioners, Not engaged
24 in active employment). While these categories are consistent with those adopted in some
25 Northern countries, they will be grouped into broader categories if necessary (such as
26 Employed, Seeking employment, and Other, inactive (Students, Pensioners)), and then
27 considered in relation to educational level ²⁶.
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46 *Risk perceptions*

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48 Collecting data on the perceived risks of COVID-19 is of crucial importance in understanding
49 individuals' related attitudes and behaviours. In line with previous survey studies, the
50 assessment of risk perceptions in the present study involves collecting information on
51 introspective judgements ^{27 28}. After asking surveyed individuals whether they have heard about
52 COVID-19 pandemic before being surveyed, an assessment is performed using a scale from 0
53 (not at all) to 10 (extremely) to measure how worried they are about getting the disease, and
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3 how contagious and severe they perceive it to be ²⁹. In addition, perceived mortality of COVID-
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5 19 is assessed based on a question about what the participant believes will be the number of
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7 deaths out of every 100 people with COVID-19. To provide greater insight into participants'
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9 COVID-19 risk perceptions, all the questions mentioned above are asked again for malaria, a
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11 well-known and common viral infection in Sub-Saharan African countries which also starts
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13 with flu-like symptoms.
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17 Finally, respondents are invited to self-assess their perceived absolute and relative risks of
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19 COVID-19 infection ³⁰ by ranking their level of self-perceived risk (four-point Likert-type scale
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21 from “very low” (=1) to “very high” (=4)) and by positioning their own perceived risks with
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23 respect to others of the same age and gender (five-point Likert-type scale from “much lower”
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25 (=1) to “much higher” (=5)). The questionnaires also include items measuring the extent of the
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27 respondent’s fear that the visiting relative is unknowingly infected with COVID-19 and
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29 asymptomatic.
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34 Other questionnaire items assessing risk perceptions include asking heads of households (/their
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36 surveyed wife) to adopt their spouse’s perspective and to report the extent to which they believe
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38 their spouse is worried about COVID-19. Similarly, both individuals are asked to report the
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40 extent to which they believe their spouse perceives that she (/he) is at risk of COVID-19 and
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42 how she (/he) places this level of perceived risk in relation to that of other wives (/husbands) of
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44 the same age and gender. Accounting for the potential impact of respondents’ current health
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46 state on their perceived risks, respondents are asked how they feel in terms of their state of
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48 health at the time of the survey (eleven-point Likert-type scale from “very poor” (=0) to “very
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50 well” (=10)).
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54 55 *Attitudes* 56 57 58 59 60

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3 Given the unprecedented context of COVID-19 pandemic, assessing individual attitudes to the
4 disease necessitates using ad-hoc questions. Considering the restrictive measures adopted in
5 Senegal from March 2020 onward, attitudes to curfews in general, whether implemented in
6 rural or urban areas are assessed in the present study. With regard to health issues, surveyed
7 individuals are invited to report how worried they are about buying counterfeit drugs, their
8 attitudes to vaccination in general and to (unavailable at the time of the first wave of data
9 collection) the anti-COVID-19 vaccine. In addition, participants are asked whether they would
10 consider having anti-COVID-19 vaccine for themselves and for their children if it were free of
11 charge (four-point Likert-type scale from “certainly yes” (=1) to “definitely not” (=4) in all
12 cases). Finally, individuals’ agreement (agree/disagree) is assessed regarding statements
13 circulating on the internet and reflecting rumour-related fake information on COVID-19
14 transmission and cure.

31 *Preventive behaviours*

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33 It has been recently suggested that locally implemented COVID-19 preventive strategies could
34 potentially explain, at least in part, the as yet slow spread of COVID-19 in SSA⁸⁹. The present
35 study collected data which could shed some more light on this issue. In our ongoing longitudinal
36 study, preventive behaviours cover individual protection measures by the study’s participants
37 and collective prevention strategies implemented by administrative, religious or medical
38 authorities in the area covered by the survey. With regard to the former, the study’s
39 questionnaires include items measuring how much the COVID-19 pandemic has led to changes
40 in everyday life in the participating households, in changes in journeys to and from the local
41 market or the closest city, and in changes in the way relatives from cities are welcomed,
42 especially in terms of possible quarantine upon their arrival.

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3 the dates, duration and nature of all collective actions implemented in the study's 12 study
4 villages. To do this, the interviewers who conduct the phone surveys have also been in charge
5 of conducting face-to-face interviews in each village, with the village chief, the healthpost
6 nurses, the community health workers (*Badjanou Gokh*), and representatives from both the
7 town hall and the subprefecture, local associations involved in the fight against Covid-19 spread
8 (e.g., former military personnel, student and youth associations), and non-governmental
9 organizations (e.g., local branches of the Red Cross). At the regional level, interviews have also
10 been conducted on a regular basis with representatives of the healthcare districts. The
11 preventive measures identified mainly consist in the distribution of leaflets, antiseptic soap and
12 face masks, as well as the installation of hand washing facilities in schools, markets, village
13 entrances, households, churches and mosques. These data will continue to be collected over the
14 whole data collection period.

31 ***Economic impact on everyday life***

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33 One primary concern about the spread of COVID-19 in Sub-Saharan African countries is a
34 possible resulting economic shock^{12 19-21}. Supposing that urban areas would most likely be the
35 first to be highly impacted by the COVID-19 pandemic, rural areas could indeed be in position
36 to soften, at least in part, the economic consequences of COVID-19 pandemic. In this respect,
37 our ongoing study assesses the pandemic's impact with questions about the main
38 sociodemographic characteristics of relatives from cities currently living in the household
39 because of COVID-19, and questions about the perceived burden on the rural household (e.g.,
40 having to provide food for more people) as well as the benefits (e.g., larger labour force for
41 agricultural work) associated with their arrival in the household. In addition, the study examines
42 possible assistance from administrative authorities or neighbours locally implemented, as well
43 as possible assistance given to neighbours because of the COVID-19 pandemic. Furthermore,
44 possible COVID-19 pandemic-related financial difficulties are explored concerning everyday
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3 purchases and sales of crops in local markets. Finally, relatives from cities temporarily living
4 in the household because of their fear of COVID-19 and induced economic losses are asked to
5 self-assess the extent to which the pandemic has impacted their own life as well as everyday
6 life in the household. In terms of financial support provided to the household, heads of
7 households are asked about those relatives currently living with them and whether these
8 relatives provided support before they arrived to temporarily stay. Similarly, they are asked
9 about the extent to which relatives who left the household to go back to cities currently
10 financially support the household.
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21 22 ***Main relationships to be tested*** 23

24 In this unprecedented COVID-19 pandemic sanitary context, while the present study serves a
25 descriptive purpose, its primary aim is to assess various relationships. In line with the economic-
26 based approach recently published in the French context of COVID-19 ³¹, our study should
27 enable the calibration of individual risk perceptions to be assessed based on the consistency
28 between perceived mortality of COVID-19 and epidemiological information available at the
29 time of data collection. Furthermore, a greater understanding of calibration should be gained by
30 the fact that we are taking perceived worry, severity and contagiousness of COVID-19 into
31 account, and conducting comparisons with introspective judgements relating to malaria. In
32 addition, taking participants' socio-demographic characteristics into account should provide
33 greater insight into the determinants of risk perceptions. Following on from Attema et al.
34 (2021), we will examine the calibration, heterogeneity and determinants of risk perceptions,
35 accounting for the temporal dynamics of the COVID-19 pandemic in Senegal. Finally, by
36 focusing on the extent to which interviewed persons (husbands, wives) assess their spouse's
37 perceived risk of getting COVID-19, this study could also help to estimate the potential impact
38 of discrepancies in couples' risk perceptions regarding the extent of preventive measures
39 actually adopted in households.
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3 As regards the COVID-19 preventive strategies implemented at the village and household
4 levels, it is possible that experience gained from the Ebola and HIV/AIDS pandemics has
5 helped people manage the risk of COVID-19¹⁰. In the present study, we hypothesize that
6 accurate recall of local prevention strategies currently in place is higher in villages with more
7 prevention strategies implemented. We also hypothesize that implementing preventive
8 strategies at the village level might have a positive impact on adopting strategies at the
9 household level. Exploring the relationship between collective and individual preventive
10 behaviours will therefore enable us to evaluate the impact of locally implemented preventive
11 measures on slowing the spread of COVID-19. Using the prospectively collected data will also
12 allow us to analyse the dynamics of this relationship over time with respect to attitudes and risk
13 perceptions.

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15 With regard to the economic impact of COVID-19 pandemic on everyday lives, adopting a
16 descriptive approach will be useful given the scarce data available. In addition, accounting for
17 the sociodemographic characteristics of both heads of households and relatives who temporarily
18 left big cities will allow us to assess the size of any possible gradient in the economic pressure
19 of the COVID-19 pandemic on rural areas and its evolution over time. In the unprecedented
20 context of the COVID-19 pandemic, the generalizability of the study's results will however
21 remain to be explored.

22 ***Patient and public involvement***

23 No patient involved. We plan to disseminate results to the study participants and all the villagers
24 interested in the study in participating villages at the end of the study (currently March 2022).
25 If restrictive measures against the gathering of people are no longer in place, dissemination is
26 planned to be held in the open air and in the presence of each village chief, healthpost
27 representatives, and the *Badjanou Gokh*. In addition, restitution workshops are planned to be
28 organised at the sanitary district and regional level and to involve administrative and sanitary
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3 authorities. Lastly, the main findings from the study are planned to be compiled in a document
4 distributed at sub-national and national levels to the administrative and sanitary authorities.
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8 **Ethics and dissemination**

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10 COVID-19 is currently (as of February 2021) spreading relatively slowly in SSA although a
11 sharp increase in its spread cannot be excluded. Given the current context, the present ongoing
12 longitudinal study protocol aims to provide data on the attitudinal, behavioural and economic
13 consequences of the disease in a rural area in Senegal at a time when very few data are available.
14 Since rural areas may likely be seen as safe refuges, our study collects data from heads of rural
15 households, their wives (in charge of managing the household) and relatives who leave cities
16 to temporarily live in these households, specifically because of the COVID-19 pandemic. The
17 study protocol was approved by the Senegalese National Ethical Committee for Research in
18 Health (131/MSAS/CNERS/Sec) and received authorisation from the Senegalese Ministry of
19 Health (619/MSAS/DPRS/DR) and the French Commission on Information Technology and
20 Liberties (CNIL 2220771).
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37 To conclude, this ongoing study benefits greatly from close previously established research
38 relationships between the researchers and the interviewers involved. Now that data collection
39 for the first wave is nearing completion, and that data collection has been proven to be feasible
40 despite COVID-19 restrictions, we believe that the primary benefit of our longitudinal design
41 will be to provide data which could help to analyse evolutions in risk perceptions, attitudes, and
42 preventive behaviours of the disease, as well as its economic impact on everyday lives. In the
43 unprecedented context of the COVID-19 pandemic, the generalizability of the study's results
44 needs to be explored.
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Figure 1. Number of COVID-19 confirmed cases at the department level (n=45)

Source: <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas>; data accessed on November 26, 2020.

Note: The administrative 'department' of Fatick covers several healthcare districts, including the Niakhar healthcare district).

Figure 2. Multivariable Poisson regression at the district level and residual dependence plot (n=79).

Note: Outcome: number of confirmed COVID-19 cases at the healthcare district level (data accessed on November 26, 2020: <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas>). Offset: total population of the healthcare district. Covariates: Urbanization rates (%), Poverty index (%), and Rates of people aged 50 and older (%).

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Figure 3. Study flow diagram

Note: Mobile phone numbers provided by community health workers (Badjanou Gokh). 500 surveyed households were expected to participate by the end of the third wave of data collection (scheduled for mid-2021), given a 90% response rate for the first wave and a 15% attrition rate at each subsequent wave.

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3 **Authors' contributions:** VS and CS conceptualised the study and obtained funding. GM, E-
4 HB, OLH and SC contributed to the development of the study design. GM, E-HB, and CB were
5 responsible for the development of the data collection platform, field testing of the study
6 logistics, and participant recruitment. VS, CS, GM, OLH and SC drafted the first version of the
7 manuscript. All authors read, edited and approved the final version.
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23 **Competing interests statement.** No competing interests to declare.
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26 **Word Count:** 4633 words.
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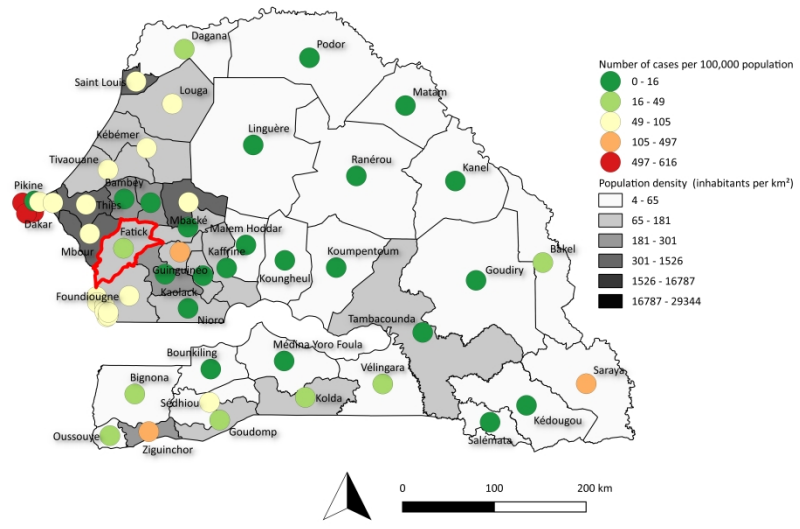


Figure 1. Number of COVID-19 confirmed cases at the department level (n=45)

593x419mm (300 x 300 DPI)

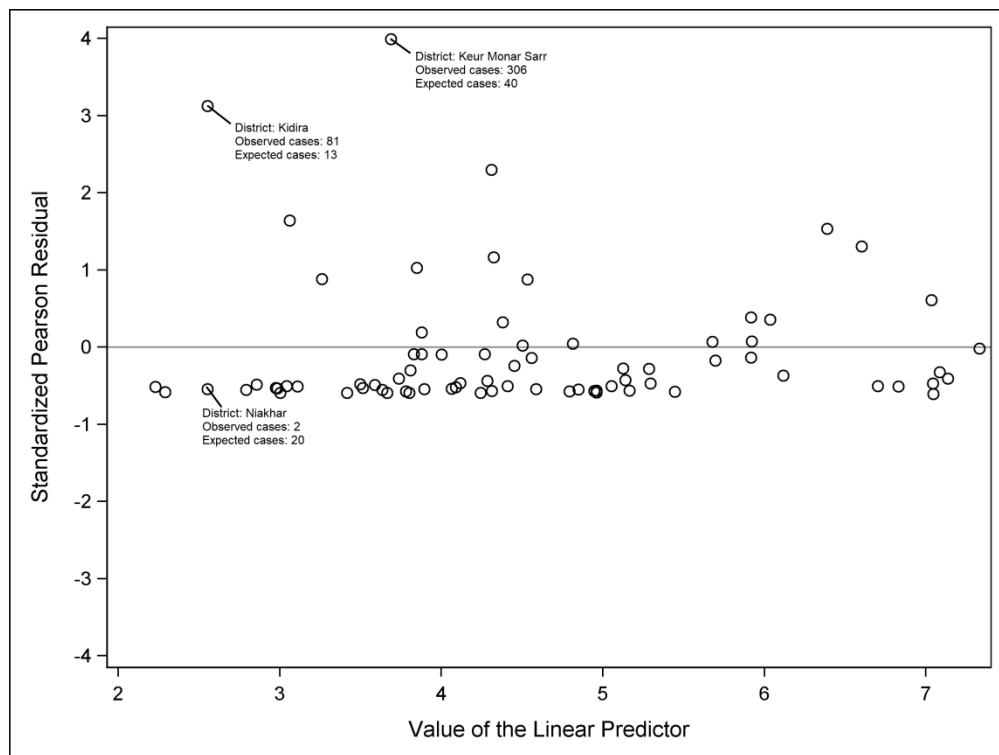


Figure 2. Multivariable Poisson regression at the district level and residual dependence plot (n=79).

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Figure 3. Study flow diagram
107x98mm (300 x 300 DPI)

Chef de famille : A PROPOS DU CORONAVIRUS...

C1. Avez-vous déjà entendu parler du Coronavirus ?

1. Oui 2. Non → **Aller à la question IC1**

C2. Quand avez-vous appris qu'il y a une épidémie de Coronavirus ?

1. Quand l'épidémie était en Chine ou en Asie
 2. Quand l'épidémie est arrivée en Europe
 3. Quand l'épidémie est arrivée en Afrique
 4. Quand l'épidémie est arrivée au Sénégal
 5. Autre : _____

C3. Comment avez-vous appris qu'il y a une épidémie de Coronavirus ?

1. Par la radio ou la télévision
 2. Par Internet
 3. Par des membres de la famille en ville
 4. Par des voisins
 5. Par le chef du village
 6. Par le Centre de santé
 7. Par votre représentant religieux (l'imam ou le curé)
 8. Par les relais communautaires
 9. Par les Badienou Gokh
 10. Autre : _____

C4. Avez-vous accès à Internet ?

1. Très facilement 2. Plutôt facilement 3. Plutôt difficilement 4. Très difficilement

C5. Si C4=1 à 3 : Est-ce que vous allez sur Internet pour avoir des informations sur le Coronavirus ?

1. Oui, tous les jours
 2. Oui, quelques fois par semaine
 3. Oui, de temps en temps
 4. Non, jamais

C6. Etes-vous inquiet qu'un membre de votre cuisine attrape le coronavirus ?

1. Très inquiet 2. Plutôt inquiet 3. Plutôt pas inquiet 4. Pas inquiet du tout

C7. Avez-vous changé vos habitudes pour éviter que le Coronavirus arrive dans votre cuisine ?

1. Oui 2. Non

C8. Est-ce que le Chef du village a pris des mesures pour éviter que les habitants attrapent le Coronavirus ?

1. Oui 2. Non

↳ Lesquelles ? _____

C9. Est-ce que le Centre de santé a pris des mesures pour éviter que les habitants attrapent le Coronavirus ?

1. Oui 2. Non

↳ Lesquelles ? _____

C10. Pour vous-même, pensez-vous que votre risque d'attraper le Coronavirus est ?

1. Très faible
2. Plutôt faible
3. Plutôt élevé
4. Très élevé

C11. Par rapport aux hommes de votre âge, est-ce que vous pensez que votre risque d'attraper le Coronavirus est ?

1. Beaucoup moins importants que pour les autres hommes de mon âge
2. Moins importants que pour les autres hommes de mon âge
3. Ni plus ni moins importants que pour les autres hommes de mon âge
4. Plus importants que pour les autres hommes de mon âge
5. Beaucoup plus importants que pour les autres hommes de mon âge

C13A. Si vous ou un membre de votre famille attrapait le Coronavirus, où iriez-vous pour les soins ?

1. Poste de Santé 2. Guérisseur 3. Autre ; Préciser _____

C13B. Pensez-vous à un médicament pour soigner le coronavirus ?

1. Oui 2. Non

C13C. Si oui, lequel ? _____.

C14. En général, craignez-vous d'acheter de faux médicaments ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C15. En général, êtes-vous réticent à l'idée de vous faire vacciner ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C16. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez vous faire vacciner ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

Si C16=3 ou 4 : C16A. Pour quelles raisons ne vous feriez-vous pas vacciner ?

1. Vous êtes contre la vaccination en général
2. Vous pensez qu'un vaccin élaboré dans l'urgence est trop dangereux
3. Vous pensez que c'est inutile parce que le COVID-19 est peu dangereux
4. Autre : _____

C17. Connaissez-vous des personnes dans votre famille, ou parmi vos amis ou connaissances, qui sont, ou qui ont été malades du Coronavirus ?

1. Oui, dans la famille 2. Oui, parmi les amis ou connaissances
3. Oui, à la fois dans la famille et parmi les amis ou connaissances 3. Non

C18. Si C17=1,3 : Est-ce qu'il s'agit de personnes qui vivent actuellement avec vous ?

1. Oui 2. Non

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C19. Selon vous, est-ce que le couvre-feux dans le bassin de Niakhar est nécessaire pour limiter l'épidémie de Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C20. Selon vous, est-ce que le couvre-feux dans les villes permet de limiter l'épidémie de Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C21. Selon vous, qu'est-ce qui est préférable ?

1. Imposer le couvre-feu seulement dans les zones où il y a des malades du Coronavirus
 2. Imposer le couvre-feu dans tout le Sénégal pour que tous les citoyens vivent la même chose
 3. Ne pas imposer de couvre-feu du tout parce qu'il y a très peu de malades au Sénégal

C22. Selon vous, dans combien de temps est-ce que l'épidémie de Coronavirus sera terminée au Sénégal ? (en mois ou en semaines) ? |__|__| mois **OU** |__|__| semaines

QUELLE EST VOTRE PERCEPTION DES RISQUES DE CORONAVIRUS ?

PR1. A quel point la possibilité d'attraper le Coronavirus vous inquiète-t-elle ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR2. Selon vous, quelle est la contagiosité du Coronavirus, c'est-à-dire la facilité avec laquelle ce virus peut se transmettre d'une personne à l'autre ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça le Coronavirus est très peu contagieux et la note 10 qu'il est vraiment très contagieux.

0	1	2	3	4	5	6	7	8	9	10
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PR3. Selon vous, quelle est la gravité du Coronavirus ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le Coronavirus n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4. Selon vous, sur 100 personnes qui attrapent le Coronavirus, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

ET POUR LE PALUDISME ?

PR1BIS. A quel point la possibilité d'attraper le paludisme vous inquiète-t-il ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR3BIS. Selon vous, quelle est la gravité du paludisme ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le paludisme n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4BIS. Selon vous, sur 100 personnes qui attrapent le paludisme, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

QUEL IMPACT DU CORONAVIRUS SUR VOTRE CUISINE ?

1
2
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4 **IC1. Combien de personnes vivent actuellement dans votre cuisine, y compris vous-même ?**

5 /_/_/_/ personnes
6

7 **IC2. Est-ce que des personnes qui vivent avec vous actuellement sont venues vous rejoindre à cause du**
8 **Coronavirus ou du couvre-feu ?**
9

- 10 1. Oui, à cause du Coronavirus
11 2. Non, pour les récoltes ou le travail de la ferme
12 3. Non, personne n'est venu nous rejoindre → Aller directement à la question IC7
13

14
15
16 **↳ IC3. Si oui, combien ?** /_/_/_/ personnes

17 Combien d'adultes ? /_/_/_/ adultes

18 Combien d'enfants de moins de 15 ans ? /_/_/_/ enfants
19
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22 **IC4. Quand ces personnes sont arrivées dans votre cuisine, avez-vous craint qu'elles soient malades du**
23 **Coronavirus sans le savoir ?**
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- 25 1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout
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3 **IC5. Qui sont ces personnes qui sont venus vous rejoindre et sont-elles toujours là ? Les questions**
4 **suyvantes**

5 **Personne 1 (adulte principal) :**

6 **A. Est-ce qu'il s'agit d'un homme ou d'une femme ?** 1. Homme 2. Femme

7 **B. Quel est son âge ?** |__|__| ans

8
9 **C. D'où venait cette personne ?** _____

10
11 **D. Quand cette personne est-elle arrivée ? (ou depuis combien de temps est-elle là ?)**

12 Arrivée le |__|__| **OU** présente depuis |__|__| mois / |__|__| semaines

13
14 **E. Est-ce que cette personne est étudiante ?**

15 1. Oui 2. Non

16
17 **F. Est-ce que cette personne avait un travail ou une activité économique avant de vous rejoindre ?**

18 1. Oui 2. Non

19
20
21 **↳ F1. Quelle était son activité principale (celle qui lui prend le plus de votre temps) ?** ____

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25 **F2. Est-ce que cette personne aidait la cuisine en envoyant de l'argent ?**

26 1. Oui, régulièrement 2. Oui, quand elle le pouvait 2. Non

27
28 **G. Est-ce que cette personne est arrivée seule dans votre cuisine ?**

29 1. Oui 2. Non

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32 **↳ G1. Combien d'adultes de 15 ans et plus l'accompagnait ?**

33 /_/_/_/

34 **G2. Pour chaque adulte, quel est le lien de parenté avec la**

35
36 **Personne 1 ?** _____

37 **G3. Combien d'enfants de moins de 15 ans l'accompagnait ?**

38 /_/_/_/

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40 **G4. Quel âge ont les enfants ?** /_/_/_/ /_/_/_/

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42
43 **H. Est-ce que d'autres adultes, seuls ou accompagnés de leurs conjoints et enfants, sont venus vous**

44 **rejoindre ?** 1. Oui 2. Non

45
46 **Pour chaque adulte, remplir une nouvelle fiche « Personne 2 » si d'autres sont présents**

47
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51 **IC6. Est-ce que des personnes qui étaient venues vous rejoindre à cause du Coronavirus sont reparties**

52 **dans leur vie habituelle ?** 1. Oui 2. Non

53
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55 **↳ Si oui, combien ?** /_/_/_/_/ personnes

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59**Pourquoi sont-elles reparties ?**

60 1. La menace du Coronavirus était moins forte qu'on l'avait craint

2. Autre : _____

Personne 1 (adulte principal) :

A. Est-ce qu'il s'agit d'un homme ou d'une femme ? 1. Homme 2. Femme

B. Quel est son âge ? |_|_| ans

C. Combien de temps cette personne est-elle restée dans votre cuisine ?

D. Est-ce que cette personne est étudiante ?

1. Oui 2. Non

E. Où est reparti cette personne ? _____

F. Pourquoi est-ce que cette personne est repartie ?

1. La menace du Coronavirus était moins forte qu'on l'avait craint

2. Autre : _____

F. Est-ce que cette personne a un travail ou une activité économique qu'elle a retrouvé ?

1. Oui 2. Non

↳ F1. Quelle est son activité principale (celle qui lui prend le plus de votre temps) ? _____

F2. Actuellement, est-ce que cette personne aide la cuisine en envoyant de l'argent ?

1. Oui, régulièrement 2. Oui, quand elle le peut 2. Non

F2. Est-ce que cette personne aidait d'avantage la cuisine avant le Coronavirus ?

1. Oui 2. Non

G. Est-ce que cette personne est repartie seule ?

1. Oui 2. Non

↳ G1. Combien d'adultes de 15 ans et plus l'accompagnait ?

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G2. Pour chaque adulte, quel est le lien de parenté avec la

Personne 1 ? _____

G2. Combien d'enfants de moins de 15 ans l'accompagnait ?

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G3. Quel âge ont les enfants ? /_/_/ /_/_/

H. Est-ce que d'autres adultes, seuls ou accompagnés de leurs conjoints et enfants, sont venus vous rejoindre ?

1. Oui 2. Non

Pour chaque adulte, remplir une nouvelle fiche « Personne 2 » si d'autres sont présents

IC7. Est-ce que la vie dans votre cuisine est plus compliquée à cause du Coronavirus ?

1. Oui, parce que nous sommes plus nombreux dans la cuisine
2. Oui, parce qu'il est difficile de vendre notre production au marché
3. Oui, parce qu'on a moins d'argent pour acheter ce dont on a besoin
4. Non, parce que nous sommes assez peu nombreux à vivre dans la cuisine
5. Non, parce que nous sommes plus nombreux à travailler
6. Autre : _____

IC8. Avez-vous reçu une aide du gouvernement parce que vous étiez en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, ...

IC9. Avez-vous reçu une aide du maire parce que vous étiez en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, de quoi s'agissait-il ? _____

IC10. Avez-vous reçu une aide de personnes de bonne volonté ou de vos voisins parce que vous étiez en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, de quoi s'agissait-il ? _____

IC11. Vous-même, avez-vous aidé une autre cuisine qui était en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, de quoi s'agissait-il ? _____

IC14. A propos du Coronavirus, on entend beaucoup de choses. Etes-vous d'accord avec les affirmations suivantes ?**IC104A. Le COVID-19, c'est surtout une maladie de blanc.**

1. D'accord 2. Pas d'accord

IC14B. Le COVID-19, c'est surtout une maladie des villes.

1. D'accord 2. Pas d'accord

IC14C. Le COVID-19, c'est juste une grippe.

1. D'accord 2. Pas d'accord

IC104D. Le COVID-19, c'est une punition divine.

1. D'accord 2. Pas d'accord

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IC14E. On peut se protéger ou guérir du COVID-19 en mangeant certains aliments (ail, gingembre, citron vert...).

1. D'accord 2. Pas d'accord

IC14F. On peut se protéger ou guérir du COVID-19 grâce à la prière.

1. D'accord 2. Pas d'accord

IC104G. On peut se protéger ou guérir du COVID-19 grâce à la médecine traditionnelle.

1. D'accord 2. Pas d'accord

IC14H. On peut se protéger ou guérir du COVID-19 grâce à des antibiotiques.

1. D'accord 2. Pas d'accord

IC14I. Le COVID-19 se transmet par les moustiques.

1. D'accord 2. Pas d'accord

IC14J. Le COVID-19 se transmet par l'air.

1. D'accord 2. Pas d'accord

IC14K. Le COVID-19 se transmet par les ondes 5G.

1. D'accord 2. Pas d'accord

IC14L. Le COVID-19 disparaît au soleil ou quand il fait chaud.

1. D'accord 2. Pas d'accord

POUR TERMINER...

D1. Comment vous sentez-vous aujourd'hui, sur une échelle de 0 à 10 (indiquez votre réponse entre 0 (Tout à fait mal) et 10 (Tout à fait bien))

Tout à fait mal										Tout à fait bien	
0	1	2	3	4	5	6	7	8	9	10	

D2. Quel est votre statut matrimonial ?

- 1. Marié(e)
- 2. Célibataire
- 3. Veuf(ve)
- 4. Divorcé(e)

D3. Si vous êtes marié(e), êtes-vous dans une union...

- 1. Polygame
- 2. Monogame
- 3. Non concerné (non marié)

D4. Est-ce que votre (première) épouse est inquiète qu'un membre de votre cuisine attrape le coronavirus ?

- 1. Très inquiète
- 2. Plutôt inquiète
- 3. Plutôt pas inquiète
- 4. Pas inquiète du tout

D5. Comment votre (première) épouse voit-elle son risque d'attraper le Coronavirus ? Est-ce que pour elle, il est ?

- 1. Très faible
- 2. Plutôt faible
- 3. Plutôt élevé
- 4. Très élevé

D6. Par rapport aux femmes de son âge, comment votre (première) épouse voit-elle son risque d'attraper le Coronavirus est :

- 1. Beaucoup moins importants que pour les autres femmes de son âge
- 2. Moins importants que pour les autres femmes de son âge
- 3. Ni plus ni moins importants que pour les autres femmes de son âge
- 4. Plus importants que pour les autres femmes de son âge
- 5. Beaucoup plus importants que pour les autres femmes de son âge

D7. Combien d'enfants avez-vous ? |_|_|

D8. A propos des enfants, êtes-vous d'accord pour qu'ils retournent à l'école ?

- 1. Oui, tout à fait
- 2. Oui, plutôt
- 3. Non, plutôt pas
- 4. Non, pas du tout

Si D8=3ou4, Pourquoi ? _____

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D9. Vous-même, êtes-vous allé à l'école publique (quelquefois appelée école « française ») ?

1. Oui 2. Non

↳ Jusqu'à quelle classe ? _____ OU Jusqu'à quel âge ? _____ OU Combien d'années ? _____

D10. Etes-vous allée à l'école coranique ?

1. Oui 2. Non

↳ Pendant combien d'années ? _____

D11. Quelle est votre activité principale (celle qui vous prend le plus de votre temps) :

D12. Dans cette activité, vous travaillez comme : (une seule réponse possible)

1. Fonctionnaire
 2. Salarié avec un contrat écrit
 3. Salarié avec un accord oral
 4. Indépendant à votre compte et sans employé
 5. Entrepreneur ou patron, avec employé(s)
 6. Apprenti
 7. Aide familiale

D13. Si, au cours des 12 derniers mois, vous n'avez pas travaillé et vous n'avez pas eu d'activité économique, quelle est votre situation actuelle ?

1. En recherche d'emploi
 2. Personne âgée ne travaillant plus/ retraité(e)
 3. Etude/ formation
 4. Invalidité/ handicap permanent/ longue maladie
 5. Autre sans occupation (personne au foyer)

Epouse en charge : A PROPOS DU CORONAVIRUS...

C1. Avez-vous déjà entendu parler du Coronavirus ?

1. Oui 2. Non → **Aller à la question IC1**

C3. Est-ce que vous allez sur Internet pour avoir des informations sur le Coronavirus ?

1. Oui, tous les jours
 2. Oui, quelques fois par semaine
 3. Oui, de temps en temps
 4. Non, jamais

C4. Avez-vous acheté des masques au cours des 2 dernières semaines ? (plusieurs réponses possibles)

1. Oui, combien ? _____
 2. Non, on a bénéficié de la distribution de masques
 2. Non, on en a fabriqué nous-mêmes
 3. Non et on n'en porte pas

C5. Avez-vous acheté du gel hydroalcolique au cours des 2 dernières semaines ?

1. Oui
 2. Non, mais j'aimerais en trouver
 2. Non et je n'en ressens pas le besoin

C6. Actuellement, êtes-vous inquiète qu'un membre de votre cuisine attrape le coronavirus ?

1. Très inquiète 2. Plutôt inquiète 3. Plutôt pas inquiète 4. Pas inquiète du tout

C7. Avez-vous changé vos habitudes pour éviter que le Coronavirus arrive dans votre cuisine ? (plusieurs réponses possibles)

1. Vous n'avez rien changé à vos habitudes
 2. Chacun doit se laver les mains à chaque fois que vous revenez à la cuisine
 3. Chacun doit se laver les mains seulement quand vous revenez du marché ou du magasin
 4. Chacun doit porter un masque pour aller au marché ou au magasin
 5. Vous utilisez du désinfectant pour nettoyer la cuisine
 6. Autre : _____

C8. Pour vous-même, pensez-vous que votre risque d'attraper le Coronavirus est ?

1. Très faible
 2. Plutôt faible
 3. Plutôt élevé
 4. Très élevé

C9. Par rapport aux femmes de votre âge, est-ce que vous pensez que votre risque d'attraper le Coronavirus est ?

1. Beaucoup moins importants que pour les autres femmes de mon âge
 2. Moins importants que pour les autres femmes de mon âge
 3. Ni plus ni moins importants que pour les autres femmes de mon âge
 4. Plus importants que pour les autres femmes de mon âge
 5. Beaucoup plus importants que pour les autres femmes de mon âge

C10. Est-ce que des personnes qui vivent avec vous actuellement sont venues vous rejoindre à cause du Coronavirus ?

1. Oui, à cause du Coronavirus
 2. Non, pour les récoltes ou le travail de la ferme
 3. Non, personne n'est venu nous rejoindre

Si C10=1,2 ou 3 : C10A. Quand ces personnes sont arrivées dans votre cuisine, avez-vous craint que certaines d'entre elles soient malades du Coronavirus sans le savoir ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C11. Avez-vous pris des précautions pour éviter le Coronavirus dans votre cuisine ?

1. Oui 2. Non



Si oui, lesquelles ? _____

C12. Si vous ou un membre de votre famille attrapait le Coronavirus, où iriez-vous pour les soins ?

1. Poste de Sante 2. Guérisseur 3. Autre ; Préciser _____

C13. Pensez-vous à un médicament pour soigner le coronavirus ?

1. Oui 2. Non

C13A. Si oui, lequel ? _____

C14. En général, craignez-vous d'acheter de faux médicaments ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C15. En général, êtes-vous réticente à l'idée de vous faire vacciner ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C16. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez vous faire vacciner ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

Si C16=3ou4 : C16A. Pour quelles raisons ne vous feriez-vous pas vacciner ?

1. Vous êtes contre la vaccination en général
 2. Vous pensez qu'un vaccin élaboré dans l'urgence est trop dangereux
 3. Vous pensez que c'est inutile parce que le COVID-19 est peu dangereux
 4. Autre : _____

C17. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez faire vacciner les enfants ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

C18. Connaissez-vous des personnes dans votre famille, ou parmi vos amis ou connaissances, qui sont, ou qui ont été malades du Coronavirus ?

1. Oui, dans la famille 2. Oui, parmi les amis ou connaissances
 3. Oui, à la fois dans la famille et parmi les amis ou connaissances 3. Non

C19. Si C18=1 à 3 :, est-ce qu'il s'agit de personnes qui vivent actuellement avec vous ?

1. Oui 2. Non

↳ **C19.A. Quel est votre lien de parenté avec cette ou ces personnes ?** _____

C19.B. Avez-vous pris des précautions pour éviter d'être contaminés à votre tour par le Coronavirus ?

2. Non, et personne l'a attrapé dans la cuisine
 2. Non, mais une ou plusieurs personnes de la cuisine ont attrapé le Coronavirus
 1. Oui : Lesquelles ? _____

C19.C. Est-ce que la ou les personnes malades sont allées dans un centre de traitement ?

1. Oui, toutes sont allées dans un centre de traitement
 2. Non, certaines ont refusé d'aller dans un centre de traitement
 2. Non, aucune n'est allée dans un centre de traitement

C19.D. Est-ce que la ou les personnes malades sont aujourd'hui guéries ?

1. Oui, toutes 2. Non, certaines ont des séquelles 2. Non, certaines sont décédées

↳ **C19.F. Comment est-ce que cette/ces personnes ont été soignées ?**

1. Toutes par Chloroquine
 1. Certaines par Chloroquine et d'autres par médecine traditionnelle
 2. Toutes par médecine traditionnelle
 3. Autre : _____

C20. Selon vous, est-ce que le couvre-feu dans le bassin de Niakhar est nécessaire pour limiter l'épidémie de Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C21. Selon vous, est-ce que le couvre-feu dans les villes permet de limiter l'épidémie de Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C22. Selon vous, qu'est-ce qui est préférable ?

1. Imposer le couvre-feu seulement dans les zones où il y a des malades du Coronavirus
 2. Imposer le couvre-feu dans tout le Sénégal pour que tous les citoyens vivent la même chose
 3. Ne pas imposer de couvre-feu du tout parce qu'il y a peu de malades au Sénégal

C23. Selon vous, dans combien de temps est-ce que l'épidémie de Coronavirus sera terminée au Sénégal ? (en mois ou en semaines)

__|__| mois OU __|__| semaines

QUELLE EST VOTRE PERCEPTION DES RISQUES DE CORONAVIRUS ?

PR1. A quel point la possibilité d'attraper le Coronavirus vous inquiète-t-elle ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR2. Selon vous, quelle est la contagiosité du Coronavirus, c'est-à-dire la facilité avec laquelle ce virus peut se transmettre d'une personne à l'autre ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça le Coronavirus est très peu contagieux et la note 10 qu'il est vraiment très contagieux.

0	1	2	3	4	5	6	7	8	9	10
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PR3. Selon vous, quelle est la gravité du Coronavirus ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le Coronavirus n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4. Selon vous, sur 100 personnes qui attrapent le Coronavirus, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 :

/ _ / _ / _ / personnes

ET POUR LE PALUDISME ?

PR1BIS. A quel point la possibilité d'attraper le paludisme vous inquiète-t-il ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR3BIS. Selon vous, quelle est la gravité du paludisme ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le paludisme n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4BIS. Selon vous, sur 100 personnes qui attrapent le paludisme, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 :

/ _ / _ / _ / personnes

QUEL IMPACT DU CORONAVIRUS SUR VOTRE CUISINE ?

IC1. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur votre vie personnelle en général ?

1. C'est très négatif
2. Il y a plus de mauvais que du bon
3. En fait, ça ne change pas grand chose par rapport à ma vie d'avant
4. Il y a plus de bon que de mauvais
5. C'est très positif

IC2. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur la cuisine ?

1. C'est très négatif
2. Il y a plus de mauvais que du bon
3. En fait, ça ne change pas grand chose par rapport à avant
4. Il y a plus de bon que de mauvais
5. C'est très positif

IC3. Est-ce qu'à cause du couvre-feu, il est plus difficile qu'avant d'acheter ce dont vous avez besoin ?

1. Oui, parce que les prix ont augmenté
2. Oui, parce qu'on trouve plus difficilement ce qu'on cherche
3. Oui, pour d'autres raisons ; Lesquelles : _____
4. Non

IC4. Est-ce qu'à cause du couvre-feu, il est plus difficile qu'avant de vendre votre production ?

1. Oui, parce que les gros marchés sont fermés
2. Oui, parce que vous n'arrivez pas à vendre vos produits au prix qu'ils devraient avoir
3. Oui, pour d'autres raisons ; Lesquelles : _____
4. Non

IC5. Actuellement, est-ce que c'est compliqué de nourrir tout le monde dans la cuisine ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

IC6. Si IC3=1 à 3 : Selon vous, est-ce que vous avez ces difficultés à cause du Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

IC7. On entend beaucoup de choses à propos du Coronavirus. Etes-vous d'accord avec les affirmations suivantes ?

IC7A. Le COVID-19, c'est surtout une maladie de blanc.

1. D'accord 2. Pas d'accord

IC7B. Le COVID-19, c'est surtout une maladie des villes.

1. D'accord 2. Pas d'accord

IC7C. Le COVID-19, c'est juste une grippe.

1. D'accord 2. Pas d'accord

IC7D. Le COVID-19, c'est une punition divine.

1. D'accord 2. Pas d'accord

IC7E. On peut se protéger ou guérir du COVID-19 en mangeant certains aliments (ail, gingembre ...).

1. D'accord 2. Pas d'accord

IC7F. On peut se protéger ou guérir du COVID-19 grâce à la prière.

1. D'accord 2. Pas d'accord

1 **IC7G. On peut se protéger ou guérir du COVID-19 grâce à la médecine traditionnelle.**

- 2 1. D'accord 2. Pas d'accord

3 **IC7H. On peut se protéger ou guérir du COVID-19 grâce à des antibiotiques.**

- 4 1. D'accord 2. Pas d'accord

5 **IC7I. Le COVID-19 se transmet par les moustiques.**

- 6 1. D'accord 2. Pas d'accord

7 **IC7J. Le COVID-19 se transmet par l'air.**

- 8 1. D'accord 2. Pas d'accord

9 **IC7K. Le COVID-19 se transmet par les ondes 5G.**

- 10 1. D'accord 2. Pas d'accord

11 **IC7L. Le COVID-19 disparaît au soleil ou quand il fait chaud.**

- 12 1. D'accord 2. Pas d'accord

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For peer review only

POUR TERMINER...

D1. Comment vous sentez-vous aujourd'hui, sur une échelle de 0 à 10 (indiquez votre réponse entre 0 (Tout à fait mal) et 10 (Tout à fait bien))

	Tout à fait mal									Tout à fait bien	
	0	1	2	3	4	5	6	7	8	9	10

D2. Est-ce que votre mari est inquiet qu'un membre de votre cuisine attrape le Coronavirus ?

1. Très inquiet 2. Plutôt inquiet 3. Plutôt pas inquiet 4. Pas inquiet du tout

D3. Comment votre mari voit-il son risque d'attraper le Coronavirus ? Est-ce que pour lui, son risque est ?

1. Très faible
 2. Plutôt faible
 3. Plutôt élevé
 4. Très élevé

D4. Par rapport aux hommes de son âge, comment votre mari voit-il son risque d'attraper le Coronavirus ? Est-ce que pour lui, son risque est ?

1. Beaucoup moins importants que pour les autres hommes de son âge
 2. Moins importants que pour les autres hommes de son âge
 3. Ni plus ni moins importants que pour les autres hommes de son âge
 4. Plus importants que pour les autres hommes de son âge
 5. Beaucoup plus importants que pour les autres hommes de son âge

D5. A propos des enfants, êtes-vous d'accord pour qu'ils retournent à l'école ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

Si D5=3 ou 4, Pourquoi ? _____

D6. Vous-même, êtes-vous allée à l'école publique (quelquefois appelée école « française ») ?

1. Oui 2. Non

↳ **Jusqu'à quelle classe ?** _____ **OU** **Jusqu'à quel âge ?** _____ **OU** **Combien d'années ?** _____

D7. Êtes-vous allée à l'école coranique ?

1. Oui 2. Non

↳ **Pendant combien d'années ?** _____

Nouvel arrivant : A PROPOS DU CORONAVIRUS...

C1. Confirmez-vous que vous vivez actuellement dans la cuisine à cause du Coronavirus ?

1. Oui 2. Non

↳ **C1A. Quelle est la principale raison qui vous a poussé(e) à rejoindre la cuisine ?**

1. La peur d'attraper le Coronavirus
 2. La peur de ne plus gagner assez d'argent pour vivre
 3. Autre : _____

C2. Etes-vous étudiant ?

1. Oui 2. Non

↳ **C2A. Quelle est la principale raison qui vous a poussé(e) à rejoindre la cuisine ?**

1. La peur d'attraper le Coronavirus
 2. La peur de ne plus gagner assez d'argent pour vivre
 3. Autre : _____

Si C1=2 et C2=2, alors STOP.

C3. Est-ce que vous allez sur Internet pour avoir des informations sur le Coronavirus ?

1. Oui, tous les jours
 2. Oui, quelques fois par semaine
 3. Oui, de temps en temps
 4. Non, jamais

C4. Quand vous êtes arrivé(e) dans la cuisine, est-ce que vous aviez-vous peur d'être malade du Coronavirus sans le savoir ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C5. A votre arrivée, est-ce que des précautions ont été prises pour éviter le Coronavirus ?

1. Oui 2. Non

↳ **C5.A. Est-ce que vous dormiez à l'écart des autres membres de la famille ?**

1. Oui 2. Non

C5.B. Est-ce que vous preniez vos repas à l'écart des autres membres de la famille ?

1. Oui 2. Non

C5.C. Au bout de combien de temps avez-vous pu vous joindre au reste de la famille ?

/ __ / __ / jours

C5.D. Est-ce que cette expérience a été difficile ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C6. Actuellement, êtes-vous inquiet qu'un membre de la cuisine attrape le coronavirus ?

1. Très inquiet 2. Plutôt inquiet 3. Plutôt pas inquiet 4. Pas inquiet du tout

C7. Pour vous-même, pensez-vous que votre risque d'attraper le Coronavirus est ?

1. Très faible
 2. Plutôt faible
 3. Plutôt élevé
 4. Très élevé

C8. Par rapport aux hommes/femmes de votre âge, est-ce que vous pensez que votre risque d'attraper le Coronavirus est :

1. Beaucoup moins importants que pour les autres hommes/femmes de mon âge
 2. Moins importants que pour les autres hommes/femmes de mon âge
 3. Ni plus ni moins importants que pour les autres hommes/femmes de mon âge
 4. Plus importants que pour les autres hommes/femmes de mon âge
 5. Beaucoup plus importants que pour les autres hommes/femmes de mon âge

C9. Si vous ou un membre de votre famille attrapait le Coronavirus, où iriez-vous pour les soins ?

1. Poste de Santé 2. Guérisseur 3. Autre ; Préciser _____

C10. Pensez-vous à un médicament pour soigner le coronavirus ?

1. Oui 2. Non

C10A. Si oui, lequel ? _____

C11. En général, craignez-vous d'acheter de faux médicaments ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C12. En général, êtes-vous réticent(e) à l'idée de vous faire vacciner ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C13. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez vous faire vacciner ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

Si C16=3 ou 4 : C16A. Pour quelles raisons ne vous feriez-vous pas vacciner ?

1. Vous êtes contre la vaccination en général
 2. Vous pensez qu'un vaccin élaboré dans l'urgence est trop dangereux
 3. Vous pensez que c'est inutile parce que le COVID-19 est peu dangereux
 4. Autre : _____

C14. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez faire vacciner vos enfants ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

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C16. Connaissez-vous des personnes dans votre famille, ou parmi vos amis ou connaissances, qui sont, ou qui ont été malades du Coronavirus ?

1. Oui, dans la famille 2. Oui, parmi les amis ou connaissances
 3. Oui, à la fois dans la famille et parmi les amis ou connaissances 3. Non

C17. Selon vous, est-ce que le couvre-feu dans le bassin de Niakhar est nécessaire pour limiter l'épidémie de Coronavirus?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C18. Selon vous, est-ce que le couvre-feu dans les villes permet de limiter l'épidémie de Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C19. Selon vous, qu'est-ce qui est préférable ?

1. Imposer le couvre-feu seulement dans les zones où il y a des malades du Coronavirus
 2. Imposer le couvre-feu dans tout le Sénégal pour que tous les citoyens vivent la même chose
 3. Ne pas imposer de couvre-feu du tout parce qu'il y a peu de malades au Sénégal

**C20. Selon vous, dans combien de temps est-ce que l'épidémie de Coronavirus sera terminée ?
(en mois ou en semaines)**

| mois **OU** | semaines

QUELLE EST VOTRE PERCEPTION DES RISQUES DE CORONAVIRUS ?

PR1. A quel point la possibilité d'attraper le Coronavirus vous inquiète-t-elle ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR2. Selon vous, quelle est la contagiosité du Coronavirus, c'est-à-dire la facilité avec laquelle ce virus peut se transmettre d'une personne à l'autre ?

Donnez une note entre 0 et 10 : la note 0 signifie que le Coronavirus est très peu contagieux et la note 10 qu'il est vraiment très contagieux.

0	1	2	3	4	5	6	7	8	9	10
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PR3. Selon vous, quelle est la gravité du Coronavirus ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le Coronavirus n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4. Selon vous, sur 100 personnes qui attrapent le Coronavirus, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

ET POUR LE PALUDISME ?

PR1BIS. A quel point la possibilité d'attraper le paludisme vous inquiète-t-il ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR3BIS. Selon vous, quelle est la gravité du paludisme ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le paludisme n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4BIS. Selon vous, sur 100 personnes qui attrapent le paludisme, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

D1. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur votre vie personnelle en général ?

- 1. C'est très négatif
- 2. Il y a plus de mauvais que du bon
- 3. En fait, ça ne change pas grand chose par rapport à ma vie d'avant
- 4. Il y a plus de bon que de mauvais
- 5. C'est très positif

D2. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur la cuisine ?

- 1. C'est très négatif
- 2. Il y a plus de mauvais que du bon
- 3. En fait, ça ne change pas grand chose par rapport à avant
- 4. Il y a plus de bon que de mauvais
- 5. C'est très positif

D3. A propos du Coronavirus, on entend beaucoup de choses. Etes-vous d'accord avec les affirmations suivantes ?

D3A. Le COVID-19, c'est surtout une maladie de blanc.

- 1. D'accord
- 2. Pas d'accord

D3B. Le COVID-19, c'est surtout une maladie des villes.

- 1. D'accord
- 2. Pas d'accord

D3C. Le COVID-19, c'est juste une grippe.

- 1. D'accord
- 2. Pas d'accord

D3D. Le COVID-19, c'est une punition divine.

- 1. D'accord
- 2. Pas d'accord

D3E. On peut se protéger ou guérir du COVID-19 en mangeant certains aliments (ail, gingembre, citron vert...).

- 1. D'accord
- 2. Pas d'accord

D3F. On peut se protéger ou guérir du COVID-19 grâce à la prière.

- 1. D'accord
- 2. Pas d'accord

D3G. On peut se protéger ou guérir du COVID-19 grâce à la médecine traditionnelle.

- 1. D'accord
- 2. Pas d'accord

D3H. On peut se protéger ou guérir du COVID-19 grâce à des antibiotiques.

- 1. D'accord
- 2. Pas d'accord

D3I. Le COVID-19 se transmet par les moustiques.

- 1. D'accord
- 2. Pas d'accord

D3J. Le COVID-19 se transmet par l'air.

- 1. D'accord
- 2. Pas d'accord

D3K. Le COVID-19 se transmet par les ondes 5G.

- 1. D'accord
- 2. Pas d'accord

D3L. Le COVID-19 disparaît au soleil ou quand il fait chaud.

- 1. D'accord
- 2. Pas d'accord

POUR TERMINER...

D1. Comment vous sentez-vous aujourd'hui, sur une échelle de 0 à 10 (indiquez votre réponse entre 0 (Tout à fait mal) et 10 (Tout à fait bien))

Tout à fait mal									Tout à fait bien	
0	1	2	3	4	5	6	7	8	9	10

D2. Selon vous, est-ce que le chef de ménage et sa (première) épouse sont inquiets qu'un membre de la cuisine attrape le Coronavirus ?

1. Très inquiets 2. Plutôt inquiets 3. Plutôt pas inquiets 4. Pas inquiets du tout

D3. Quel est votre statut matrimonial ?

1. Marié(e)
 2. Célibataire
 3. Veuf(ve)
 4. Divorcé(e)

D4. Si vous êtes marié(e), êtes-vous dans une union...

1. Polygame
 2. Monogame
 3. Non concerné (non marié)

D5. Avez-vous des enfants ?

1. Oui 2. Non

D6. Si D4=1 : Combien ? _____ de quel(s) âge(s) ? _____

D7. Quelle est votre activité principale (celle qui vous prend le plus de votre temps) : _____

D8. Dans cette activité, vous travaillez comme : (une seule réponse possible)

1. Fonctionnaire
 2. Salarié avec un contrat écrit
 3. Salarié avec un accord oral
 4. Indépendant à votre compte et sans employé
 5. Entrepreneur ou patron, avec employé(s)
 6. Apprenti
 7. Aide familiale

D9. Est-ce que votre activité est dans le secteur ?

1. Des transports
 2. De la pêche
 3. Du tourisme
 3. Non, un autre secteur

D10. Si, au cours des 12 derniers mois, vous n'avez pas travaillé et vous n'avez pas eu d'activité économique, quelle est votre situation actuelle ?

1. En recherche d'emploi
 2. Personne âgée ne travaillant plus/ retraité(e)
 3. Etude/ formation
 4. Invalidité/ handicap permanent/ longue maladie
 5. Autre sans occupation (personne au foyer)

BMJ Open

COVID-19-related attitudes, risk perceptions, preventive behaviours and economic impact in Sub-Saharan African countries: Implementing a longitudinal phone-based survey protocol in rural Senegalese households

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COVID-19-related attitudes, risk perceptions, preventive behaviours and economic impact in Sub-Saharan African countries: Implementing a longitudinal phone-based survey protocol in rural Senegalese households

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Abstract

Introduction. Rural areas are considered safe havens against the increased spread of COVID-19 and associated restrictive measures, especially in contexts where public authorities are not in a position to systematically and substantially ease COVID-19-induced economic shocks. In the current Sub-Saharan Africa context, still marked by uncertainty surrounding the spread of COVID-19, we present the protocol of an ongoing longitudinal study aimed at investigating COVID-19-related attitudes, risks perceptions, preventive behaviours, and economic impact in rural areas in Senegal.

Methods and analysis. A prospective randomized longitudinal study of 600 households located in three semi-urban villages and nine randomly selected rural villages in the Niakhar area (located 135 km East of Dakar). Three ad hoc phone surveys are administered to 600 heads of households, their housewives in charge of managing the household and a relative living temporarily in the household, respectively. In addition to sharing identical sets of questions on several topics (risks perceptions, attitudes to curfew, attitudes to vaccines, beliefs about COVID-19 infection), the three separate survey questionnaires also include other topics (economic impact, local preventive strategies) whose related questions differ between questionnaires. As analysing evolutions is the study's primary focus, data on all the topics covered will be collected in three waves unless the spread of COVID-19 by mid-2021 justifies extending data collection. The present article presents the study protocol and details about the implementation of the first wave of data collection which started in July 2020. The decision to wait before presenting the protocol was based on the unprecedented context the COVID-19 pandemic.

Ethics and dissemination. The survey's protocol was approved by the Senegalese National Ethical Committee for Research in Health (131/MSAS/CNERS/Sec) and received authorisation from both the Senegalese Ministry of Health (619/MSAS/DPRS/DR) and the French Commission on Information Technology and Liberties (CNIL 2220771).

Keywords: COVID-19; attitudes; risk perceptions; preventive behaviours; economic impact; Sub-Saharan African ; longitudinal ; survey protocol.

Article Summary

- The current Sub-Saharan African (SSA) context is still marked by uncertainty surrounding the spread of the COVID-19 pandemic and the scarce availability of individual data.
- This ongoing longitudinal study aims to investigate COVID-19-related attitudes, risk perceptions, preventive behaviours, and the economic impact in Senegalese rural areas.
- Three waves of data collection are planned (the first wave started in July 2020). However, this number may increase if the spread of COVID-19 by mid-2021 justifies extending data collection over a longer period of time.
- In the unprecedented context of the COVID-19 pandemic, the generalizability of the study's results needs to be explored.

Introduction

After spreading from China to other Asian countries in late 2019, COVID-19 appeared in Western Europe in January 2020 where it rapidly led to overwhelmed hospitals and an exponential increase in deaths (COVID-19 data repository of the Johns Hopkins Center for Systems Science and Engineering, Baltimore, MD, USA). While most European countries adopted lockdown measures only several weeks after the first COVID-19 cases were reported (e.g., a 6-week delay in Italy and a 7-week delay in France), many Sub-Saharan African (SSA) countries decided to act sooner before the outbreak spread.

Spread of COVID-19 still limited in SSA, but uncertainties remain about how the pandemic will evolve

The COVID-19 pandemic spread to SSA in February/March 2020. Senegal implemented restrictive measures (curfew, closing schools, banning of public gatherings, and cancellation of major national and religious celebrations) three weeks after the first COVID-19 cases had been reported in the country, whereas in Nigeria, a street publicity awareness campaign on COVID-19 preventive measures was launched in the capital Lagos, two days after the first cases had been identified. Concerns were expressed, especially in Senegal and Burkina Faso, with respect to the sharp increases in both these countries in the number of COVID-19 cases soon after the first cases were confirmed there ¹.

The announcements of restrictive measures led to mass movements of people from big cities to rural villages, both caused by fear of COVID-19 and the impact it could have in terms of economic losses. However, as time went by, it increasingly appeared that the outbreak was much less devastating than initially anticipated ², and the mass movements of people mentioned above were gradually reversed. Apart from the early adoption of restrictive measures, the most widely proposed hypothesis for the much lower spread of COVID-19 in SSA than in most other world regions is that different demographic characteristics (younger average ages, lower

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3 population densities, and lower urbanization rates)³⁻⁶, and a higher immune response in relation
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5 with more highly solicited immune systems⁷ hamper the spread. Recently, another strong
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7 hypothesis has been put forward, suggesting that the extensive implementation of local
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9 preventive strategies may have played a crucial role in substantially lowering the spread of the
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11 disease^{8,9}.

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15 Nevertheless, the possibility cannot be ruled out that the COVID-19 pandemic could spread
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17 throughout SSA countries^{2,10}, as it did (and still continues to do) in North African and European
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19 countries (i.e., all the countries north of SSA (see the Johns Hopkins Coronavirus world map:
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21 <https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf>
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23 6)). Such a development is of great concern because of the associated risk of overwhelming
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25 already fragile healthcare systems^{1,11} in a context where the pandemic has brought about a
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27 worldwide economic crisis whose consequences might be severe for SSA¹².

31 32 **Few COVID-19 data are available from an individual perspective**

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34 Most published analyses to date on the COVID-19 pandemic in SSA countries have not been
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36 supported by collected data, except for data on the numbers of confirmed cases and deaths. One
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38 study conducted in seven English-speaking countries (Ghana, Kenya, South Africa, Tanzania,
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40 Uganda and the English-speaking regions of Cameroon) assessed the extent to which these
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42 populations were exposed to COVID-19-related misinformation. Using an online survey (April-
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44 May 2020), it showed that false beliefs were shared by between 15 and 30% of the respondents,
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46 depending on the false statement assessed, with a higher likelihood of false beliefs in older and
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48 unemployed respondents¹³. In addition, three studies assessed COVID-19-related knowledge,
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50 attitudes and practices in Nigeria, in Ghana/South Africa, and in the Republic of Chad (April-
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52 May 2020, March-April 2020, and May-August 2020, respectively) using online surveys. All
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54 three showed that study participants were very familiar with personal preventive measures
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56 against COVID-19 and the disease's main symptoms¹⁴⁻¹⁶. However, the Nigerian study also
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3 showed that approximately half of the surveyed individuals believed that only elderly people
4 with comorbidities were likely to develop severe COVID-19, and 85% were unaware of the risk
5 of being infected by asymptomatic individuals. Consistent with this finding and given that the
6 participants in the Nigerian study were relatively young (69% aged between 21 and 30 years
7 old), only 22.5% of surveyed individuals reported wearing a face mask when they went out ¹⁴.
8
9 Another Nigerian study involving assessing perceived risks pointed out that despite good
10 knowledge of COVID-19, implementing preventive behaviours would not be likely if the virus
11 was not considered a risk (online survey in April 2020) ¹⁷. More generally, the study conducted
12 in the Republic of Chad showed significantly lower uptake of preventive practices in
13 individuals with lower educational levels and precarious employment ¹⁶. Furthermore, other
14 published studies emphasized individuals' fear of serious COVID-19-related economic
15 repercussions (notably people living in urban Ghanaian neighbourhoods with their own
16 business in the informal economy ¹⁸ and farmers working in the Ethiopian vegetable sector ¹⁹).
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33 **Study Objectives**

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36 The present ongoing study was designed in a setting marked by both uncertainty about the
37 spread of COVID-19 in Sub-Saharan Africa and the scarce availability of individual data. Given
38 the continued risk that the spread of COVID-19 will increase substantially in SSA, the memory
39 of mass movements of people from big cities in March 2020 highlights the role that rural areas
40 could play if such an event were to reoccur. This role could be major in a context where public
41 authorities may not be in a position to systematically and substantially ease the economic shock
42 induced by the pandemic²⁰⁻²². While this role could evolve depending on rural populations'
43 attitudes to such mass movements and their perceptions of the associated risks, we hypothesized
44 that evaluating the evolution of individuals' perceived impact of COVID-19 pandemic could
45 provide invaluable information about the potential pressure of the COVID-19 pandemic on
46 these rural areas.
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3 Accordingly, the present ongoing longitudinal study was designed to investigate the attitudes,
4 risk perceptions and preventive behaviours of people living in a Senegalese rural area in terms
5 of COVID-19, as well as their perceptions of the related economic impact. As rural areas often
6 have limited access to the internet and given the increased risk of COVID-19 transmission
7 during close contact interactions, the only available option was to conduct a phone-based
8 survey.
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17 **Methods and analysis**

20 **Population**

21 This study includes adults (18 years old and over) living in all 30 villages of the rural Niakhar
22 area covered by the Niakhar Health and Demographic Surveillance System (HDSS) ²³. The
23 Niakhar HDSS, which is the oldest HDSS in Senegal (created in 1962) and one of the oldest in
24 Western Africa, gathers regular data for the population covered, including demographic and
25 health data. The Niakhar area itself is located 135 km East of Dakar and covers 203 km² with
26 a population of 50 355 inhabitants (January 2018 census). More specifically, it is located in the
27 ‘department’ (an administrative area) of Fatick (there are 45 departments in Senegal) which
28 covers three different healthcare districts (including the Niakhar healthcare district). Most of
29 the population (96.4%) living in this area belongs to the Serere ethnic group. The main
30 economic activity is agriculture with food cultivation (millet) and a cash crop (peanuts), in
31 addition to small-scale cattle breeding.
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48 **Representativeness of Niakhar area with respect to COVID-19**

49 As the Niakhar area has been a site for research for several years, especially for infectology and
50 epidemiology of infectious diseases, including malaria, meningitis and hepatitis ²³, the question
51 arises as to how much the people living in the area are still truly representative of other
52 Senegalese rural populations, especially regarding their knowledge of diseases that have long
53 been studied there. However, given that COVID-19 is a new disease, we hypothesized that the
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3 Niakhar healthcare district would likely be comparable with other such districts in the country
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5 with a similar population density, age distribution and poverty index ²⁴.
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9 To assess this hypothesis, we performed a multivariable Poisson regression on the numbers of
10 confirmed COVID-19 cases at the district level (Senegalese Minister of Health:
11 [http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-](http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas)
12 [officielles-et-quotidiennes-du-msas](http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas)). While standardized residuals represent variations in the
13 data that cannot be explained by the model, residual plots enabled us to identify outliers (Figure
14 1). As a result, the Niakhar healthcare district could not be considered an outlier in terms of the
15 number of declared cases of COVID-19 (standardized residuals= -0.53). Furthermore, at the
16 time the study began, the prevalence of COVID-19 in the department of Fatick was comparable
17 with that in other Senegalese departments with similar population densities (Figure 2).
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30 **Study design and procedure**

31 Study participants were randomly selected using a two-stage stratified sampling design. All 30
32 villages in the Niakhar area were previously identified as rural (n=27) or semi-urban villages
33 (n=3), depending on their infrastructure and equipment ²³. More specifically, unlike rural
34 villages, the three semi-urbanised villages have health facilities, a weekly market, daily buses
35 to the Senegal's capital Dakar, and several shops. The participating villages selected in the first
36 stage (n=12) of the present study comprised the three semi-urban villages and a simple random
37 sample of nine rural villages. In the second stage of sampling, 600 households from all the 1756
38 households in these 12 participating villages were selected, again using simple random
39 sampling.
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52 This figure of 600 households was not arrived at from a calculation to determine the optimal
53 number of households to be included, but was the result of a trade-off between the budgetary
54 and logistic constraints of surveying up to three members in each household (i.e., a potential
55 maximum of 1800 individuals) in three successive waves of data collection (the first wave
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3 started on July 27, 2020). Taking into account the design of previous surveys conducted in the
4 same area ²⁵, we assumed a response rate of 90% for the first wave of data collection and an
5 attrition rate of 15% over the data collection period, resulting in an estimated 500 surveyed
6 households by the end of the third wave (scheduled for mid-2021). In the planned analyses,
7 potential selection bias will be assessed and reduced by using sampling weights computed as
8 reciprocals of the probabilities of selection of each household. Final weights will be calculated
9 using an iterative process (ranking ratio estimation) involving sociodemographic data collected
10 regularly by the Niakhar HDSS.
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22 **Longitudinal phone survey in multi-adult households**

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24 Data collection is expected to last at least until end-2021, unless the spread of COVID-19 at
25 that time justifies extending data collection. The study started in March 2020 and it is funded
26 until March 2022 (Inserm-ANRS, grant number ECTZ147735). Given that any application for
27 funding for possible subsequent waves of data collection needs to occur well in advance, the
28 decision about this issue has been postponed until mid-2021. For each wave, data are collected
29 by surveying participants over their mobile phone. Participants' telephone numbers were
30 recorded by community health workers (locally called *Badjanou Gokh*) prior to the first survey.
31 Phone interviews are conducted using Computer assisted telephone interviews (CATI)
32 software. To achieve higher response rates, 15 calls (1 initial and 14 callbacks) are planned
33 during the several weeks of data collection, at different times of the day and on different days,
34 before discarding a non-responsive telephone number. While 12 to 15 calls and 6 to 10 calls are
35 generally recommended for landline and mobile CATI surveys respectively ²⁶, we opted for a
36 maximum of 15 calls given the frequency of poor telephone connections in the area.
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55 The COVID-19 sanitary context makes the implementation of the survey at each wave and the
56 collection of data more complex than usual. Although this study protocol was the result of a
57 close collaboration between Senegalese and French researchers, travelling restrictions
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3 prevented some of the latter from being physically present for the training of the CATI
4 interviewers, for data collection preparatory meetings, for field meetings and for feedback
5 sessions. Accordingly, the Senegalese research team is in charge of coordinating data collection
6 and organizing CATI schedules, although regular internet-based meetings with the French
7 research team ensure joint decision-making.
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15 The lack of the possibility to train interviewers up on CATI in Senegal because of the
16 international travel restrictions meant that only experienced bilingual (French and Serere)
17 interviewers already present in Senegal could administer the CATI surveys. As Serere is an oral
18 only language, practice sessions to administer the questionnaires were performed by the
19 interviewers in order to reach a consensus on the specific words to be used when performing
20 the interviews in Serere. Consequently, the relevance and ease of understanding of each
21 questionnaire item was assessed before the interviews took place in Serere. A total of seven
22 interviewers collected data in the first wave. They were supervised by another senior
23 interviewer whose specific role, in addition to supervision, was to share feedback on data
24 collection with the two (Senegalese and French) research teams. In many aspects, the data
25 collection process greatly benefits from long-term existing experience the interviewers have in
26 administering research-based surveys.
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43 **Data collection**

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45 The first data collection wave began on July 27, 2020 and interviewing lasted six weeks.
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47 Furthermore, parallel data collection about local preventive strategies implemented in villages
48 since July 2020 is about to be completed. Figure 3 summarizes the major steps of data collection
49 and presents the study sample to be followed in our longitudinal design.
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55 For the first wave, phone interviews took place with three different persons in each participating
56 household as follows: the head of the household, his wife (for those who had more than one
57 wife, the wife responsible for managing the household), and a relative from a city who had
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3 decided to come and live momentarily in the rural household because of the risk of COVID-19
4 and the fear of associated economic consequences. Specifically, heads of households had to
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6 and the fear of associated economic consequences. Specifically, heads of households had to
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8 decide which wife and which temporary visiting relative would be surveyed, and to provide
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10 their names and mobile phone numbers during the first phone interview. When interviewing
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12 heads of households, their designated wives and visiting relatives on their mobile phones, the
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14 interviewers first presented the study and informed them about its longitudinal design, obtained
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16 their consent to participate, and then interviewed them. As a way of thanking households for
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18 their participation, the community health workers provided them with a personal protection kit
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20 including hydroalcoholic gel and a face mask at the end of the first wave of data collection.
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24 As regards relatives temporarily living in the household, those individuals interviewed in the
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26 first wave of data collection will be surveyed in successive waves. New visiting relatives
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28 identified between two different waves of data collection will also be included in the study
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30 design by interviewing them in all data collection waves subsequent to their inclusion. As we
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32 wanted to ensure that our study design and protocol were feasible given current national and
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34 international restrictive measures due to COVID-19, we chose to wait until the first wave of
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36 data collection neared completion before presenting the study design here.
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40 41 **Questionnaires**

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43 Three questionnaires were constructed (one each) for the heads of the selected households, their
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45 designated wives in charge of managing the household, and their designated relative
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47 temporarily living with them (Supplementary file 1, 2 and 3, respectively). In addition to
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49 sharing identical sets of questions on several topics (risks perceptions, attitudes to curfew,
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51 attitudes to vaccines, beliefs about COVID-19 infection), the three separate survey
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53 questionnaires also contain other questions on other topics (economic impact, local preventive
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55 strategies). These questions differ between questionnaires. For example, with regard to local
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57 preventive strategies, household heads are asked about the local COVID-19 prevention
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3 strategies implemented in their village, while their wives are asked about anti-COVID-19
4 private prevention measures in the household, and newcomers about personal preventive
5 measures in the household and possibly asked to implement when they first arrived (e.g.,
6 quarantine). While this study involves collecting data at different moments in time, the same
7 topics and associated sets of questions presented below will be used throughout the study in
8 order to evaluate evolutions.
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16 17 18 **Measures**

19 20 *Sociodemographic characteristics*

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22 As the study's framework provides for collected data to be matched with existing data in the
23 Niakhar HDSS ²³ database, only individual sociodemographic data needs to be collected during
24 the telephone interviews, including marital status, educational level, number of children, the
25 latter's ages and type of schooling (public or religious school), as well as the respondent's level
26 of access to the internet. With regard to employment at the time of the survey, participants are
27 invited to answer open-ended questions whose responses are consequently recoded into nine
28 different standard categories (Farmers, Craftsmen, Workers, Employees, Intermediate
29 professions, Managers and higher intellectual professions, Students, Pensioners, Not engaged
30 in active employment). While these categories are consistent with those adopted in some
31 Northern countries, they will be grouped into broader categories if necessary (such as
32 Employed, Seeking employment, and Other, inactive (Students, Pensioners)), and then
33 considered in relation to educational level ²⁷.
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51 *Risk perceptions*

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53 Collecting data on the perceived risks of COVID-19 is of crucial importance in understanding
54 individuals' related attitudes and behaviours. In line with previous survey studies, the
55 assessment of risk perceptions in the present study involves collecting information on
56 introspective judgements ^{28,29}. After asking surveyed individuals whether they have heard about
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3 COVID-19 pandemic before being surveyed, an assessment is performed using a scale from 0
4 (not at all) to 10 (extremely) to measure how worried they are about getting the disease, and
5 how contagious and severe they perceive it to be³⁰. In addition, perceived mortality of COVID-
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COVID-19 is assessed based on a question about what the participant believes will be the number of deaths out of every 100 people with COVID-19. To provide greater insight into participants' COVID-19 risk perceptions, all the questions mentioned above are asked again for malaria, a well-known and common viral infection in Sub-Saharan African countries which also starts with flu-like symptoms.

Finally, respondents are invited to self-assess their perceived absolute and relative risks of COVID-19 infection³¹ by ranking their level of self-perceived risk (four-point Likert-type scale from "very low" (=1) to "very high" (=4)) and by positioning their own perceived risks with respect to others of the same age and gender (five-point Likert-type scale from "much lower" (=1) to "much higher" (=5)). The questionnaires also include items measuring the extent of the respondent's fear that the visiting relative is unknowingly infected with COVID-19 and asymptomatic.

Other questionnaire items assessing risk perceptions include asking heads of households (/their surveyed wife) to adopt their spouse's perspective and to report the extent to which they believe their spouse is worried about COVID-19. Similarly, both individuals are asked to report the extent to which they believe their spouse perceives that she (/he) is at risk of COVID-19 and how she (/he) places this level of perceived risk in relation to that of other wives (/husbands) of the same age and gender. Accounting for the potential impact of respondents' current health state on their perceived risks, respondents are asked how they feel in terms of their state of health at the time of the survey (eleven-point Likert-type scale from "very poor" (=0) to "very well" (=10)).

Attitudes

Given the unprecedented context of COVID-19 pandemic, assessing individual attitudes to the disease necessitates using ad-hoc questions. Considering the restrictive measures adopted in Senegal from March 2020 onward, attitudes to curfews in general, whether implemented in rural or urban areas are assessed in the present study. With regard to health issues, surveyed individuals are invited to report how worried they are about buying counterfeit drugs, their attitudes to vaccination in general and to (unavailable at the time of the first wave of data collection) the anti-COVID-19 vaccine. In addition, participants are asked whether they would consider having anti-COVID-19 vaccine for themselves and for their children if it were free of charge (four-point Likert-type scale from “certainly yes” (=1) to “definitely not” (=4) in all cases). Assessing knowledge of COVID-19 variants and their perceived risks in comparison with the risks of the original strain is planned for subsequent waves of data collection. Finally, individuals’ agreement (agree/disagree) is assessed regarding statements circulating on the internet and reflecting rumour-related fake information on COVID-19 transmission and cure.

Preventive behaviours

It has been recently suggested that locally implemented COVID-19 preventive strategies could potentially explain, at least in part, the as yet slow spread of COVID-19 in SSA⁸⁹. The present study collected data which could shed some more light on this issue. In our ongoing longitudinal study, preventive behaviours cover individual protection measures by the study’s participants and collective prevention strategies implemented by administrative, religious or medical authorities in the area covered by the survey. With regard to the former, the study’s questionnaires include items measuring how much the COVID-19 pandemic has led to changes in everyday life in the participating households, in changes in journeys to and from the local market or the closest city, and in changes in the way relatives from cities are welcomed, especially in terms of possible quarantine upon their arrival.

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3 In order to compare participant recall with objective data on locally implemented collective
4 prevention strategies, specific data has been gathered from the outset of the study to document
5 the dates, duration and nature of all collective actions implemented in the study's 12 study
6 villages. To do this, the interviewers who conduct the phone surveys have also been in charge
7 of conducting face-to-face interviews in each village, with the village chief, the healthpost
8 nurses, the community health workers (*Badjanou Gokh*), and representatives from both the
9 town hall and the subprefecture, local associations involved in the fight against Covid-19 spread
10 (e.g., former military personnel, student and youth associations), and non-governmental
11 organizations (e.g., local branches of the Red Cross). At the regional level, interviews have also
12 been conducted on a regular basis with representatives of the healthcare districts. The
13 preventive measures identified mainly consist in the distribution of leaflets, antiseptic soap and
14 face masks, as well as the installation of hand washing facilities in schools, markets, village
15 entrances, households, churches and mosques. These data will continue to be collected over the
16 whole data collection period.

35 ***Economic impact on everyday life***

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37 One primary concern about the spread of COVID-19 in Sub-Saharan African countries is a
38 possible resulting economic shock^{12 20-22}. Supposing that urban areas would most likely be the
39 first to be highly impacted by the COVID-19 pandemic, rural areas could indeed be in position
40 to soften, at least in part, the economic consequences of COVID-19 pandemic. In this respect,
41 our ongoing study assesses the pandemic's impact with questions about the main
42 sociodemographic characteristics of relatives from cities currently living in the household
43 because of COVID-19, and questions about the perceived burden on the rural household (e.g.,
44 having to provide food for more people) as well as the benefits (e.g., larger labour force for
45 agricultural work) associated with their arrival in the household. In addition, the study examines
46 possible assistance from administrative authorities or neighbours locally implemented, as well
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3 as possible assistance given to neighbours because of the COVID-19 pandemic. Furthermore,
4 possible COVID-19 pandemic-related financial difficulties are explored concerning everyday
5 purchases and sales of crops in local markets. Finally, relatives from cities temporarily living
6 in the household because of their fear of COVID-19 and induced economic losses are asked to
7 self-assess the extent to which the pandemic has impacted their own life as well as everyday
8 life in the household. In terms of financial support provided to the household, heads of
9 households are asked about those relatives currently living with them and whether these
10 relatives provided support before they arrived to temporarily stay. Similarly, they are asked
11 about the extent to which relatives who left the household to go back to cities currently
12 financially support the household.
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27 **Main relationships to be tested**

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29 In this unprecedented COVID-19 pandemic sanitary context, while the present study serves a
30 descriptive purpose, its primary aim is to assess various relationships. In line with the economic-
31 based approach recently published in the French context of COVID-19 ³², our study should
32 enable the calibration of individual risk perceptions to be assessed based on the consistency
33 between perceived mortality of COVID-19 and epidemiological information available at the
34 time of data collection. Furthermore, a greater understanding of calibration should be gained by
35 the fact that we are taking perceived worry, severity and contagiousness of COVID-19 into
36 account, and conducting comparisons with introspective judgements relating to malaria. In
37 addition, taking participants' socio-demographic characteristics into account should provide
38 greater insight into the determinants of risk perceptions. Following on from Attema et al.
39 (2021), we will examine the calibration, heterogeneity and determinants of risk perceptions,
40 accounting for the temporal dynamics of the COVID-19 pandemic in Senegal. Finally, by
41 focusing on the extent to which interviewed persons (husbands, wives) assess their spouse's
42 perceived risk of getting COVID-19, this study could also help to estimate the potential impact
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3 of discrepancies in couples' risk perceptions regarding the extent of preventive measures
4 actually adopted in households.
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8 As regards the COVID-19 preventive strategies implemented at the village and household
9 levels, it is possible that experience gained from the Ebola and HIV/AIDS pandemics has
10 helped people manage the risk of COVID-19¹⁰. In the present study, we hypothesize that
11 accurate recall of local prevention strategies currently in place is higher in villages with more
12 prevention strategies implemented. We also hypothesize that implementing preventive
13 strategies at the village level might have a positive impact on adopting strategies at the
14 household level. Exploring the relationship between collective and individual preventive
15 behaviours will therefore enable us to evaluate the impact of locally implemented preventive
16 measures on slowing the spread of COVID-19. Using the prospectively collected data will also
17 allow us to analyse the dynamics of this relationship over time with respect to attitudes and risk
18 perceptions.
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34 With regard to the economic impact of COVID-19 pandemic on everyday lives, adopting a
35 descriptive approach will be useful given the scarce data available. In addition, accounting for
36 the sociodemographic characteristics of both heads of households and relatives who temporarily
37 left big cities will allow us to assess the size of any possible gradient in the economic pressure
38 of the COVID-19 pandemic on rural areas and its evolution over time. In the unprecedented
39 context of the COVID-19 pandemic, the generalizability of the study's results will however
40 remain to be explored.
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51 **Patient and public involvement**

52 No patient involved. We plan to disseminate results to the study participants and all the villagers
53 interested in the study in participating villages at the end of the study (currently March 2022).
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55 If restrictive measures against the gathering of people are no longer in place, dissemination is
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3 planned to be held in the open air and in the presence of each village chief, healthpost
4 representatives, and the *Badjanou Gokh*. In addition, restitution workshops are planned to be
5 organised at the sanitary district and regional level and to involve administrative and sanitary
6 authorities. Lastly, the main findings from the study are planned to be compiled in a document
7 distributed at sub-national and national levels to the administrative and sanitary authorities.
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15 **Ethics and dissemination**

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18 COVID-19 is currently (as of February 2021) spreading relatively slowly in SSA although a
19 sharp increase in its spread cannot be excluded. Given the current context, the present ongoing
20 longitudinal study protocol aims to provide data on the attitudinal, behavioural and economic
21 consequences of the disease in a rural area in Senegal at a time when very few data are available.
22 Since rural areas may likely be seen as safe refuges, our study collects data from heads of rural
23 households, their wives (in charge of managing the household) and relatives who leave cities
24 to temporarily live in these households, specifically because of the COVID-19 pandemic. The
25 study protocol was approved by the Senegalese National Ethical Committee for Research in
26 Health (131/MSAS/CNERS/Sec) and received authorisation from the Senegalese Ministry of
27 Health (619/MSAS/DPRS/DR) and the French Commission on Information Technology and
28 Liberties (CNIL 2220771).
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44 To conclude, this ongoing study benefits greatly from close previously established research
45 relationships between the researchers and the interviewers involved. Now that data collection
46 for the first wave is nearing completion, and that data collection has been proven to be feasible
47 despite COVID-19 restrictions, we believe that the primary benefit of our longitudinal design
48 will be to provide data which could help to analyse evolutions in risk perceptions, attitudes, and
49 preventive behaviours of the disease, as well as its economic impact on everyday lives. In the
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unprecedented context of the COVID-19 pandemic, the generalizability of the study's results needs to be explored.

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Figure 1. Multivariable Poisson regression at the district level and residual dependence plot (n=79).

Note: Outcome: number of confirmed COVID-19 cases at the healthcare district level (data accessed on November 26, 2020: <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas>). Offset: total population of the healthcare district. Covariates: Urbanization rates (%), Poverty index (%), and Rates of people aged 50 and older (%).

Figure 2. Number of COVID-19 confirmed cases at the department level (n=45)

Source: <http://www.sante.gouv.sn/Pr%2525C3%2525A9sentation/coronavirus-informations-officielles-et-quotidiennes-du-msas>; data accessed on November 26, 2020.

Note: The administrative 'department' of Fatick covers several healthcare districts, including the Niakhar healthcare district).

Figure 3. Study flow diagram

Note: Mobile phone numbers provided by community health workers (Badjanou Gokh). 500 surveyed households were expected to participate by the end of the third wave of data collection (scheduled for mid-2021), given a 90% response rate for the first wave and a 15% attrition rate at each subsequent wave.

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3 **Authors' contributions:** VS and CS conceptualised the study and obtained funding. GM, E-
4 HB, OLH and SC contributed to the development of the study design. GM, E-HB, and CB were
5 responsible for the development of the data collection platform, field testing of the study
6 logistics, and participant recruitment. VS, CS, GM, OLH and SC drafted the first version of the
7 manuscript. All authors read, edited and approved the final version.
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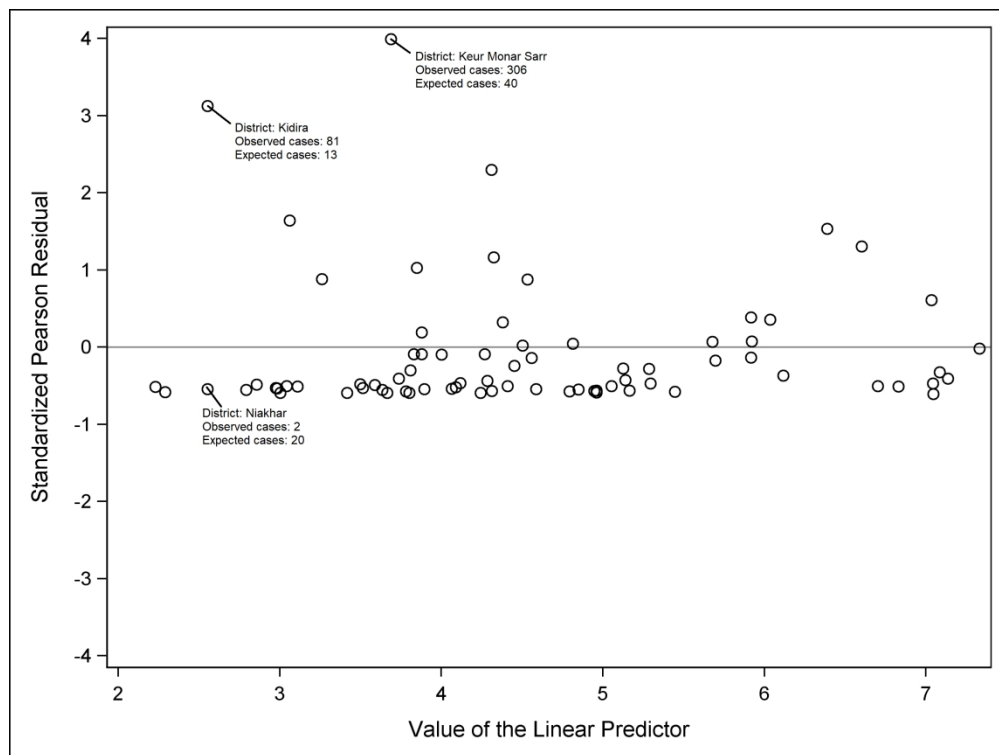


Figure 1. Multivariable Poisson regression at the district level and residual dependence plot (n=79).

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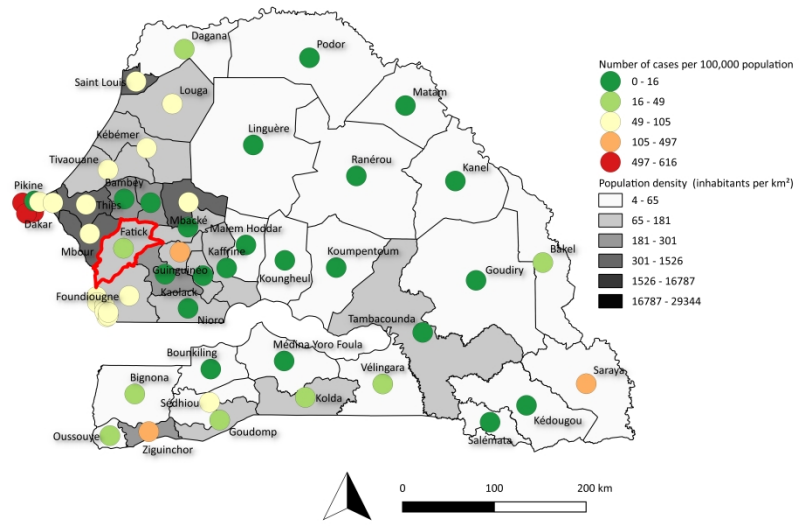


Figure 2. Number of COVID-19 confirmed cases at the department level (n=45)

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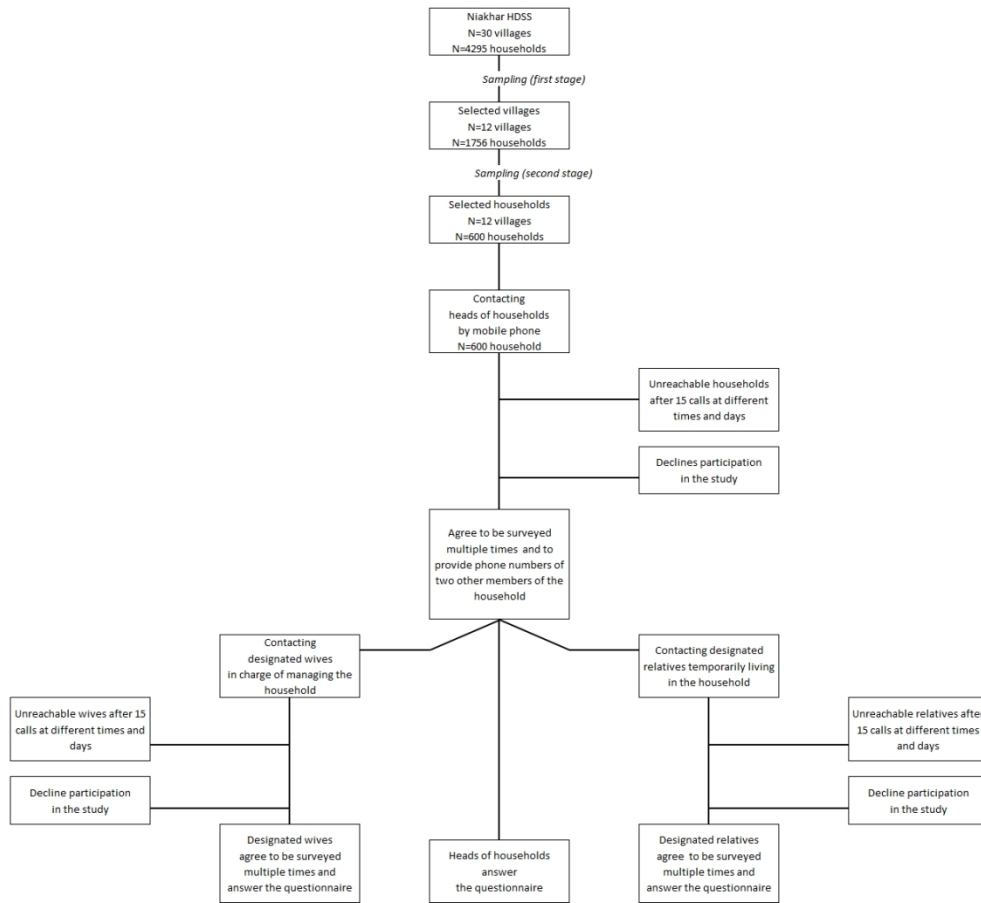


Figure 3. Study flow diagram

107x98mm (300 x 300 DPI)

Chef de famille : A PROPOS DU CORONAVIRUS...

C1. Avez-vous déjà entendu parler du Coronavirus ?

1. Oui 2. Non → **Aller à la question IC1**

C2. Quand avez-vous appris qu'il y a une épidémie de Coronavirus ?

1. Quand l'épidémie était en Chine ou en Asie
 2. Quand l'épidémie est arrivée en Europe
 3. Quand l'épidémie est arrivée en Afrique
 4. Quand l'épidémie est arrivée au Sénégal
 5. Autre : _____

C3. Comment avez-vous appris qu'il y a une épidémie de Coronavirus ?

1. Par la radio ou la télévision
 2. Par Internet
 3. Par des membres de la famille en ville
 4. Par des voisins
 5. Par le chef du village
 6. Par le Centre de santé
 7. Par votre représentant religieux (l'imam ou le curé)
 8. Par les relais communautaires
 9. Par les Badienou Gokh
 10. Autre : _____

C4. Avez-vous accès à Internet ?

1. Très facilement 2. Plutôt facilement 3. Plutôt difficilement 4. Très difficilement

C5. Si C4=1 à 3 : Est-ce que vous allez sur Internet pour avoir des informations sur le Coronavirus ?

1. Oui, tous les jours
 2. Oui, quelques fois par semaine
 3. Oui, de temps en temps
 4. Non, jamais

C6. Etes-vous inquiet qu'un membre de votre cuisine attrape le coronavirus ?

1. Très inquiet 2. Plutôt inquiet 3. Plutôt pas inquiet 4. Pas inquiet du tout

C7. Avez-vous changé vos habitudes pour éviter que le Coronavirus arrive dans votre cuisine ?

1. Oui 2. Non

C8. Est-ce que le Chef du village a pris des mesures pour éviter que les habitants attrapent le Coronavirus ?

1. Oui 2. Non

↳ Lesquelles ? _____

C9. Est-ce que le Centre de santé a pris des mesures pour éviter que les habitants attrapent le Coronavirus ?

1. Oui 2. Non

↳ Lesquelles ? _____

C10. Pour vous-même, pensez-vous que votre risque d'attraper le Coronavirus est ?

1. Très faible
2. Plutôt faible
3. Plutôt élevé
4. Très élevé

C11. Par rapport aux hommes de votre âge, est-ce que vous pensez que votre risque d'attraper le Coronavirus est ?

1. Beaucoup moins importants que pour les autres hommes de mon âge
2. Moins importants que pour les autres hommes de mon âge
3. Ni plus ni moins importants que pour les autres hommes de mon âge
4. Plus importants que pour les autres hommes de mon âge
5. Beaucoup plus importants que pour les autres hommes de mon âge

C13A. Si vous ou un membre de votre famille attrapait le Coronavirus, où iriez-vous pour les soins ?

1. Poste de Santé 2. Guérisseur 3. Autre ; Préciser _____

C13B. Pensez-vous à un médicament pour soigner le coronavirus ?

1. Oui 2. Non

C13C. Si oui, lequel ? _____.

C14. En général, craignez-vous d'acheter de faux médicaments ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C15. En général, êtes-vous réticent à l'idée de vous faire vacciner ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C16. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez vous faire vacciner ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

Si C16=3 ou 4 : C16A. Pour quelles raisons ne vous feriez-vous pas vacciner ?

1. Vous êtes contre la vaccination en général
2. Vous pensez qu'un vaccin élaboré dans l'urgence est trop dangereux
3. Vous pensez que c'est inutile parce que le COVID-19 est peu dangereux
4. Autre : _____

C17. Connaissez-vous des personnes dans votre famille, ou parmi vos amis ou connaissances, qui sont, ou qui ont été malades du Coronavirus ?

1. Oui, dans la famille 2. Oui, parmi les amis ou connaissances
3. Oui, à la fois dans la famille et parmi les amis ou connaissances 3. Non

C18. Si C17=1,3 : Est-ce qu'il s'agit de personnes qui vivent actuellement avec vous ?

1. Oui 2. Non

1 **C19. Selon vous, est-ce que le couvre-feux dans le bassin de Niakhar est nécessaire pour limiter**
2 **l'épidémie de Coronavirus ?**

- 3 1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

5 **C20. Selon vous, est-ce que le couvre-feux dans les villes permet de limiter l'épidémie de Coronavirus ?**

- 6 1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

8 **C21. Selon vous, qu'est-ce qui est préférable ?**

- 9 1. Imposer le couvre-feu seulement dans les zones où il y a des malades du Coronavirus
10 2. Imposer le couvre-feu dans tout le Sénégal pour que tous les citoyens vivent la même chose
11 3. Ne pas imposer de couvre-feu du tout parce qu'il y a très peu de malades au Sénégal

12 **C22. Selon vous, dans combien de temps est-ce que l'épidémie de Coronavirus sera terminée au Sénégal ?**
13 **(en mois ou en semaines) ?** |__|__| mois **OU** |__|__| semaines

QUELLE EST VOTRE PERCEPTION DES RISQUES DE CORONAVIRUS ?

PR1. A quel point la possibilité d'attraper le Coronavirus vous inquiète-t-elle ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR2. Selon vous, quelle est la contagiosité du Coronavirus, c'est-à-dire la facilité avec laquelle ce virus peut se transmettre d'une personne à l'autre ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça le Coronavirus est très peu contagieux et la note 10 qu'il est vraiment très contagieux.

0	1	2	3	4	5	6	7	8	9	10
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PR3. Selon vous, quelle est la gravité du Coronavirus ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le Coronavirus n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4. Selon vous, sur 100 personnes qui attrapent le Coronavirus, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

ET POUR LE PALUDISME ?

PR1BIS. A quel point la possibilité d'attraper le paludisme vous inquiète-t-il ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR3BIS. Selon vous, quelle est la gravité du paludisme ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le paludisme n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4BIS. Selon vous, sur 100 personnes qui attrapent le paludisme, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

QUEL IMPACT DU CORONAVIRUS SUR VOTRE CUISINE ?

1
2
3
4 **IC1. Combien de personnes vivent actuellement dans votre cuisine, y compris vous-même ?**

5 /_/_/_/ personnes
6

7 **IC2. Est-ce que des personnes qui vivent avec vous actuellement sont venues vous rejoindre à cause du**
8 **Coronavirus ou du couvre-feu ?**
9

- 10 1. Oui, à cause du Coronavirus
11 2. Non, pour les récoltes ou le travail de la ferme
12 3. Non, personne n'est venu nous rejoindre → Aller directement à la question IC7
13

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15
16 **↳ IC3. Si oui, combien ?** /_/_/_/ personnes

17 Combien d'adultes ? /_/_/_/ adultes

18 Combien d'enfants de moins de 15 ans ? /_/_/_/ enfants
19
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22 **IC4. Quand ces personnes sont arrivées dans votre cuisine, avez-vous craint qu'elles soient malades du**
23 **Coronavirus sans le savoir ?**
24

- 25 1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout
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IC5. Qui sont ces personnes qui sont venus vous rejoindre et sont-elles toujours là ? Les questions suivantes

Personne 1 (adulte principal) :

A. Est-ce qu'il s'agit d'un homme ou d'une femme ? 1. Homme 2. Femme

B. Quel est son âge ? |__|__| ans

C. D'où venait cette personne ? _____

D. Quand cette personne est-elle arrivée ? (ou depuis combien de temps est-elle là ?)

Arrivée le |__|__| **OU** présente depuis |__|__| mois / |__|__| semaines

E. Est-ce que cette personne est étudiante ?

1. Oui 2. Non

F. Est-ce que cette personne avait un travail ou une activité économique avant de vous rejoindre ?

1. Oui 2. Non

↳ **F1. Quelle était son activité principale (celle qui lui prend le plus de votre temps) ?** _____

F2. Est-ce que cette personne aidait la cuisine en envoyant de l'argent ?

1. Oui, régulièrement 2. Oui, quand elle le pouvait 2. Non

G. Est-ce que cette personne est arrivée seule dans votre cuisine ?

1. Oui 2. Non

↳ **G1. Combien d'adultes de 15 ans et plus l'accompagnait ?**

/_/_/_/

G2. Pour chaque adulte, quel est le lien de parenté avec la

Personne 1 ? _____

G3. Combien d'enfants de moins de 15 ans l'accompagnait ?

/_/_/_/

G4. Quel âge ont les enfants ? /_/_/_/ /_/_/_/

H. Est-ce que d'autres adultes, seuls ou accompagnés de leurs conjoints et enfants, sont venus vous rejoindre ?

1. Oui 2. Non

Pour chaque adulte, remplir une nouvelle fiche « Personne 2 » si d'autres sont présents

IC6. Est-ce que des personnes qui étaient venues vous rejoindre à cause du Coronavirus sont reparties dans leur vie habituelle ?

1. Oui 2. Non

↳ **Si oui, combien ?** /_/_/_/_/ personnes

.....**Pourquoi sont-elles reparties ?**

1. La menace du Coronavirus était moins forte qu'on l'avait craint

2. Autre : _____

Personne 1 (adulte principal) :

A. Est-ce qu'il s'agit d'un homme ou d'une femme ? 1. Homme 2. Femme

B. Quel est son âge ? |_|_| ans

C. Combien de temps cette personne est-elle restée dans votre cuisine ?

D. Est-ce que cette personne est étudiante ?

1. Oui 2. Non

E. Où est reparti cette personne ? _____

F. Pourquoi est-ce que cette personne est repartie ?

1. La menace du Coronavirus était moins forte qu'on l'avait craint

2. Autre : _____

F. Est-ce que cette personne a un travail ou une activité économique qu'elle a retrouvé ?

1. Oui 2. Non

↳ F1. Quelle est son activité principale (celle qui lui prend le plus de votre temps) ? _____

F2. Actuellement, est-ce que cette personne aide la cuisine en envoyant de l'argent ?

1. Oui, régulièrement 2. Oui, quand elle le peut 2. Non

F2. Est-ce que cette personne aidait d'avantage la cuisine avant le Coronavirus ?

1. Oui 2. Non

G. Est-ce que cette personne est repartie seule ?

1. Oui 2. Non

↳ G1. Combien d'adultes de 15 ans et plus l'accompagnait ?

/_/_/

G2. Pour chaque adulte, quel est le lien de parenté avec la

Personne 1 ? _____

G2. Combien d'enfants de moins de 15 ans l'accompagnait ?

/_/_/

G3. Quel âge ont les enfants ? /_/_/ /_/_/

H. Est-ce que d'autres adultes, seuls ou accompagnés de leurs conjoints et enfants, sont venus vous rejoindre ?

1. Oui 2. Non

Pour chaque adulte, remplir une nouvelle fiche « Personne 2 » si d'autres sont présents

IC7. Est-ce que la vie dans votre cuisine est plus compliquée à cause du Coronavirus ?

1. Oui, parce que nous sommes plus nombreux dans la cuisine
2. Oui, parce qu'il est difficile de vendre notre production au marché
3. Oui, parce qu'on a moins d'argent pour acheter ce dont on a besoin
4. Non, parce que nous sommes assez peu nombreux à vivre dans la cuisine
5. Non, parce que nous sommes plus nombreux à travailler
6. Autre : _____

IC8. Avez-vous reçu une aide du gouvernement parce que vous étiez en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, ...

IC9. Avez-vous reçu une aide du maire parce que vous étiez en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, de quoi s'agissait-il ? _____

IC10. Avez-vous reçu une aide de personnes de bonne volonté ou de vos voisins parce que vous étiez en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, de quoi s'agissait-il ? _____

IC11. Vous-même, avez-vous aidé une autre cuisine qui était en difficulté à cause du Coronavirus ?

1. Oui 2. Non

↳ Si oui, de quoi s'agissait-il ? _____

IC14. A propos du Coronavirus, on entend beaucoup de choses. Etes-vous d'accord avec les affirmations suivantes ?**IC104A. Le COVID-19, c'est surtout une maladie de blanc.**

1. D'accord 2. Pas d'accord

IC14B. Le COVID-19, c'est surtout une maladie des villes.

1. D'accord 2. Pas d'accord

IC14C. Le COVID-19, c'est juste une grippe.

1. D'accord 2. Pas d'accord

IC104D. Le COVID-19, c'est une punition divine.

1. D'accord 2. Pas d'accord

1 **IC14E. On peut se protéger ou guérir du COVID-19 en mangeant certains aliments (ail, gingembre,**
2 **citron vert...).**

- 3 1. D'accord 2. Pas d'accord

4
5 **IC14F. On peut se protéger ou guérir du COVID-19 grâce à la prière.**

- 6 1. D'accord 2. Pas d'accord

7
8
9 **IC104G. On peut se protéger ou guérir du COVID-19 grâce à la médecine traditionnelle.**

- 10 1. D'accord 2. Pas d'accord

11
12
13 **IC14H. On peut se protéger ou guérir du COVID-19 grâce à des antibiotiques.**

- 14 1. D'accord 2. Pas d'accord

15
16
17 **IC14I. Le COVID-19 se transmet par les moustiques.**

- 18 1. D'accord 2. Pas d'accord

19
20
21 **IC14J. Le COVID-19 se transmet par l'air.**

- 22 1. D'accord 2. Pas d'accord

23
24 **IC14K. Le COVID-19 se transmet par les ondes 5G.**

- 25 1. D'accord 2. Pas d'accord

26
27
28 **IC14L. Le COVID-19 disparaît au soleil ou quand il fait chaud.**

- 29 1. D'accord 2. Pas d'accord

POUR TERMINER...

D1. Comment vous sentez-vous aujourd'hui, sur une échelle de 0 à 10 (indiquez votre réponse entre 0 (Tout à fait mal) et 10 (Tout à fait bien))

	Tout à fait mal									Tout à fait bien	
	0	1	2	3	4	5	6	7	8	9	10

D2. Quel est votre statut matrimonial ?

- 1. Marié(e)
- 2. Célibataire
- 3. Veuf(ve)
- 4. Divorcé(e)

D3. Si vous êtes marié(e), êtes-vous dans une union...

- 1. Polygame
- 2. Monogame
- 3. Non concerné (non marié)

D4. Est-ce que votre (première) épouse est inquiète qu'un membre de votre cuisine attrape le coronavirus ?

- 1. Très inquiète
- 2. Plutôt inquiète
- 3. Plutôt pas inquiète
- 4. Pas inquiète du tout

D5. Comment votre (première) épouse voit-elle son risque d'attraper le Coronavirus ? Est-ce que pour elle, il est ?

- 1. Très faible
- 2. Plutôt faible
- 3. Plutôt élevé
- 4. Très élevé

D6. Par rapport aux femmes de son âge, comment votre (première) épouse voit-elle son risque d'attraper le Coronavirus est :

- 1. Beaucoup moins importants que pour les autres femmes de son âge
- 2. Moins importants que pour les autres femmes de son âge
- 3. Ni plus ni moins importants que pour les autres femmes de son âge
- 4. Plus importants que pour les autres femmes de son âge
- 5. Beaucoup plus importants que pour les autres femmes de son âge

D7. Combien d'enfants avez-vous ? | _ | _ |

D8. A propos des enfants, êtes-vous d'accord pour qu'ils retournent à l'école ?

- 1. Oui, tout à fait
- 2. Oui, plutôt
- 3. Non, plutôt pas
- 4. Non, pas du tout

Si D8=3 ou 4, Pourquoi ? _____

1 **D9. Vous-même, êtes-vous allé à l'école publique (quelquefois appelée école « française ») ?**

- 2 1. Oui 2. Non

3
4 **↳ Jusqu'à quelle classe ? _____ OU Jusqu'à quel âge ? _____ OU Combien d'années ? _____**

7 **D10. Etes-vous allée à l'école coranique ?**

- 8 1. Oui 2. Non

9
10
11 **↳ Pendant combien d'années ? _____**

14 **D11. Quelle est votre activité principale (celle qui vous prend le plus de votre temps) :**

17
18 **D12. Dans cette activité, vous travaillez comme :** (une seule réponse possible)

- 19 1. Fonctionnaire
20 2. Salarié avec un contrat écrit
21 3. Salarié avec un accord oral
22 4. Indépendant à votre compte et sans employé
23 5. Entrepreneur ou patron, avec employé(s)
24 6. Apprenti
25 7. Aide familiale

26
27
28 **D13. Si, au cours des 12 derniers mois, vous n'avez pas travaillé et vous n'avez pas eu d'activité**
29 **économique, quelle est votre situation actuelle ?**

- 30 1. En recherche d'emploi
31 2. Personne âgée ne travaillant plus/ retraité(e)
32 3. Etude/ formation
33 4. Invalidité/ handicap permanent/ longue maladie
34 5. Autre sans occupation (personne au foyer)

Epouse en charge : A PROPOS DU CORONAVIRUS...

C1. Avez-vous déjà entendu parler du Coronavirus ?

1. Oui 2. Non → **Aller à la question IC1**

C3. Est-ce que vous allez sur Internet pour avoir des informations sur le Coronavirus ?

1. Oui, tous les jours
 2. Oui, quelques fois par semaine
 3. Oui, de temps en temps
 4. Non, jamais

C4. Avez-vous acheté des masques au cours des 2 dernières semaines ? (plusieurs réponses possibles)

1. Oui, combien ? _____
 2. Non, on a bénéficié de la distribution de masques
 2. Non, on en a fabriqué nous-mêmes
 3. Non et on n'en porte pas

C5. Avez-vous acheté du gel hydroalcoolique au cours des 2 dernières semaines ?

1. Oui
 2. Non, mais j'aimerais en trouver
 2. Non et je n'en ressens pas le besoin

C6. Actuellement, êtes-vous inquiète qu'un membre de votre cuisine attrape le coronavirus ?

1. Très inquiète 2. Plutôt inquiète 3. Plutôt pas inquiète 4. Pas inquiète du tout

C7. Avez-vous changé vos habitudes pour éviter que le Coronavirus arrive dans votre cuisine ? (plusieurs réponses possibles)

1. Vous n'avez rien changé à vos habitudes
 2. Chacun doit se laver les mains à chaque fois que vous revenez à la cuisine
 3. Chacun doit se laver les mains seulement quand vous revenez du marché ou du magasin
 4. Chacun doit porter un masque pour aller au marché ou au magasin
 5. Vous utilisez du désinfectant pour nettoyer la cuisine
 6. Autre : _____

C8. Pour vous-même, pensez-vous que votre risque d'attraper le Coronavirus est ?

1. Très faible
 2. Plutôt faible
 3. Plutôt élevé
 4. Très élevé

C9. Par rapport aux femmes de votre âge, est-ce que vous pensez que votre risque d'attraper le Coronavirus est ?

1. Beaucoup moins importants que pour les autres femmes de mon âge
 2. Moins importants que pour les autres femmes de mon âge
 3. Ni plus ni moins importants que pour les autres femmes de mon âge
 4. Plus importants que pour les autres femmes de mon âge
 5. Beaucoup plus importants que pour les autres femmes de mon âge

C10. Est-ce que des personnes qui vivent avec vous actuellement sont venues vous rejoindre à cause du Coronavirus ?

1. Oui, à cause du Coronavirus
 2. Non, pour les récoltes ou le travail de la ferme
 3. Non, personne n'est venu nous rejoindre

Si C10=1,2 ou 3 : C10A. Quand ces personnes sont arrivées dans votre cuisine, avez-vous craint que certaines d'entre elles soient malades du Coronavirus sans le savoir ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C11. Avez-vous pris des précautions pour éviter le Coronavirus dans votre cuisine ?

1. Oui 2. Non



Si oui, lesquelles ? _____

C12. Si vous ou un membre de votre famille attrapait le Coronavirus, où iriez-vous pour les soins ?

1. Poste de Sante 2. Guérisseur 3. Autre ; Préciser _____

C13. Pensez-vous à un médicament pour soigner le coronavirus ?

1. Oui 2. Non

C13A. Si oui, lequel ? _____

C14. En général, craignez-vous d'acheter de faux médicaments ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C15. En général, êtes-vous réticente à l'idée de vous faire vacciner ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C16. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez vous faire vacciner ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

Si C16=3ou4 : C16A. Pour quelles raisons ne vous feriez-vous pas vacciner ?

1. Vous êtes contre la vaccination en général
 2. Vous pensez qu'un vaccin élaboré dans l'urgence est trop dangereux
 3. Vous pensez que c'est inutile parce que le COVID-19 est peu dangereux
 4. Autre : _____

C17. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez faire vacciner les enfants ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

C18. Connaissez-vous des personnes dans votre famille, ou parmi vos amis ou connaissances, qui sont, ou qui ont été malades du Coronavirus ?

1. Oui, dans la famille 2. Oui, parmi les amis ou connaissances
 3. Oui, à la fois dans la famille et parmi les amis ou connaissances 3. Non

C19. Si C18=1 à 3 :, est-ce qu'il s'agit de personnes qui vivent actuellement avec vous ?

1. Oui 2. Non

↳ **C19.A. Quel est votre lien de parenté avec cette ou ces personnes ?** _____

C19.B. Avez-vous pris des précautions pour éviter d'être contaminés à votre tour par le Coronavirus ?

2. Non, et personne l'a attrapé dans la cuisine
 2. Non, mais une ou plusieurs personnes de la cuisine ont attrapé le Coronavirus
 1. Oui : Lesquelles ? _____

C19.C. Est-ce que la ou les personnes malades sont allées dans un centre de traitement ?

1. Oui, toutes sont allées dans un centre de traitement
 2. Non, certaines ont refusé d'aller dans un centre de traitement
 2. Non, aucune n'est allée dans un centre de traitement

C19.D. Est-ce que la ou les personnes malades sont aujourd'hui guéries ?

1. Oui, toutes 2. Non, certaines ont des séquelles 2. Non, certaines sont décédées

↳ **C19.F. Comment est-ce que cette/ces personnes ont été soignées ?**

1. Toutes par Chloroquine
 1. Certaines par Chloroquine et d'autres par médecine traditionnelle
 2. Toutes par médecine traditionnelle
 3. Autre : _____

C20. Selon vous, est-ce que le couvre-feu dans le bassin de Niakhar est nécessaire pour limiter l'épidémie de Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C21. Selon vous, est-ce que le couvre-feu dans les villes permet de limiter l'épidémie de Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C22. Selon vous, qu'est-ce qui est préférable ?

1. Imposer le couvre-feu seulement dans les zones où il y a des malades du Coronavirus
 2. Imposer le couvre-feu dans tout le Sénégal pour que tous les citoyens vivent la même chose
 3. Ne pas imposer de couvre-feu du tout parce qu'il y a peu de malades au Sénégal

C23. Selon vous, dans combien de temps est-ce que l'épidémie de Coronavirus sera terminée au Sénégal ? (en mois ou en semaines)

__|__| mois **OU** __|__| semaines

QUELLE EST VOTRE PERCEPTION DES RISQUES DE CORONAVIRUS ?

PR1. A quel point la possibilité d'attraper le Coronavirus vous inquiète-t-elle ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR2. Selon vous, quelle est la contagiosité du Coronavirus, c'est-à-dire la facilité avec laquelle ce virus peut se transmettre d'une personne à l'autre ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça le Coronavirus est très peu contagieux et la note 10 qu'il est vraiment très contagieux.

0	1	2	3	4	5	6	7	8	9	10
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PR3. Selon vous, quelle est la gravité du Coronavirus ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le Coronavirus n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
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PR4. Selon vous, sur 100 personnes qui attrapent le Coronavirus, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 :

/ _ / _ / _ / personnes

ET POUR LE PALUDISME ?

PR1BIS. A quel point la possibilité d'attraper le paludisme vous inquiète-t-il ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR3BIS. Selon vous, quelle est la gravité du paludisme ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le paludisme n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

PR4BIS. Selon vous, sur 100 personnes qui attrapent le paludisme, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 :

/ _ / _ / _ / personnes

QUEL IMPACT DU CORONAVIRUS SUR VOTRE CUISINE ?

IC1. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur votre vie personnelle en général ?

1. C'est très négatif
2. Il y a plus de mauvais que du bon
3. En fait, ça ne change pas grand chose par rapport à ma vie d'avant
4. Il y a plus de bon que de mauvais
5. C'est très positif

IC2. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur la cuisine ?

1. C'est très négatif
2. Il y a plus de mauvais que du bon
3. En fait, ça ne change pas grand chose par rapport à avant
4. Il y a plus de bon que de mauvais
5. C'est très positif

IC3. Est-ce qu'à cause du couvre-feu, il est plus difficile qu'avant d'acheter ce dont vous avez besoin ?

1. Oui, parce que les prix ont augmenté
2. Oui, parce qu'on trouve plus difficilement ce qu'on cherche
3. Oui, pour d'autres raisons ; Lesquelles : _____
4. Non

IC4. Est-ce qu'à cause du couvre-feu, il est plus difficile qu'avant de vendre votre production ?

1. Oui, parce que les gros marchés sont fermés
2. Oui, parce que vous n'arrivez pas à vendre vos produits au prix qu'ils devraient avoir
3. Oui, pour d'autres raisons ; Lesquelles : _____
4. Non

IC5. Actuellement, est-ce que c'est compliqué de nourrir tout le monde dans la cuisine ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

IC6. Si IC3=1 à 3 : Selon vous, est-ce que vous avez ces difficultés à cause du Coronavirus ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

IC7. On entend beaucoup de choses à propos du Coronavirus. Etes-vous d'accord avec les affirmations suivantes ?

IC7A. Le COVID-19, c'est surtout une maladie de blanc.

1. D'accord 2. Pas d'accord

IC7B. Le COVID-19, c'est surtout une maladie des villes.

1. D'accord 2. Pas d'accord

IC7C. Le COVID-19, c'est juste une grippe.

1. D'accord 2. Pas d'accord

IC7D. Le COVID-19, c'est une punition divine.

1. D'accord 2. Pas d'accord

IC7E. On peut se protéger ou guérir du COVID-19 en mangeant certains aliments (ail, gingembre ...).

1. D'accord 2. Pas d'accord

IC7F. On peut se protéger ou guérir du COVID-19 grâce à la prière.

1. D'accord 2. Pas d'accord

1 **IC7G. On peut se protéger ou guérir du COVID-19 grâce à la médecine traditionnelle.**

- 2 1. D'accord 2. Pas d'accord

3 **IC7H. On peut se protéger ou guérir du COVID-19 grâce à des antibiotiques.**

- 4 1. D'accord 2. Pas d'accord

5 **IC7I. Le COVID-19 se transmet par les moustiques.**

- 6 1. D'accord 2. Pas d'accord

7 **IC7J. Le COVID-19 se transmet par l'air.**

- 8 1. D'accord 2. Pas d'accord

9 **IC7K. Le COVID-19 se transmet par les ondes 5G.**

- 10 1. D'accord 2. Pas d'accord

11 **IC7L. Le COVID-19 disparaît au soleil ou quand il fait chaud.**

- 12 1. D'accord 2. Pas d'accord

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For peer review only

POUR TERMINER...

D1. Comment vous sentez-vous aujourd'hui, sur une échelle de 0 à 10 (indiquez votre réponse entre 0 (Tout à fait mal) et 10 (Tout à fait bien))

	Tout à fait mal									Tout à fait bien	
	0	1	2	3	4	5	6	7	8	9	10

D2. Est-ce que votre mari est inquiet qu'un membre de votre cuisine attrape le Coronavirus ?

1. Très inquiet 2. Plutôt inquiet 3. Plutôt pas inquiet 4. Pas inquiet du tout

D3. Comment votre mari voit-il son risque d'attraper le Coronavirus ? Est-ce que pour lui, son risque est ?

1. Très faible
 2. Plutôt faible
 3. Plutôt élevé
 4. Très élevé

D4. Par rapport aux hommes de son âge, comment votre mari voit-il son risque d'attraper le Coronavirus ? Est-ce que pour lui, son risque est ?

1. Beaucoup moins importants que pour les autres hommes de son âge
 2. Moins importants que pour les autres hommes de son âge
 3. Ni plus ni moins importants que pour les autres hommes de son âge
 4. Plus importants que pour les autres hommes de son âge
 5. Beaucoup plus importants que pour les autres hommes de son âge

D5. A propos des enfants, êtes-vous d'accord pour qu'ils retournent à l'école ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

Si D5=3 ou 4, Pourquoi ? _____

D6. Vous-même, êtes-vous allée à l'école publique (quelquefois appelée école « française ») ?

1. Oui 2. Non

↳ **Jusqu'à quelle classe ?** _____ **OU** **Jusqu'à quel âge ?** _____ **OU** **Combien d'années ?** _____

D7. Etes-vous allée à l'école coranique ?

1. Oui 2. Non

↳ **Pendant combien d'années ?** _____

Nouvel arrivant : A PROPOS DU CORONAVIRUS...

C1. Confirmez-vous que vous vivez actuellement dans la cuisine à cause du Coronavirus ?

1. Oui 2. Non

↳ **C1A. Quelle est la principale raison qui vous a poussé(e) à rejoindre la cuisine ?**

1. La peur d'attraper le Coronavirus
 2. La peur de ne plus gagner assez d'argent pour vivre
 3. Autre : _____

C2. Etes-vous étudiant ?

1. Oui 2. Non

↳ **C2A. Quelle est la principale raison qui vous a poussé(e) à rejoindre la cuisine ?**

1. La peur d'attraper le Coronavirus
 2. La peur de ne plus gagner assez d'argent pour vivre
 3. Autre : _____

Si C1=2 et C2=2, alors STOP.

C3. Est-ce que vous allez sur Internet pour avoir des informations sur le Coronavirus ?

1. Oui, tous les jours
 2. Oui, quelques fois par semaine
 3. Oui, de temps en temps
 4. Non, jamais

C4. Quand vous êtes arrivé(e) dans la cuisine, est-ce que vous aviez-vous peur d'être malade du Coronavirus sans le savoir ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C5. A votre arrivée, est-ce que des précautions ont été prises pour éviter le Coronavirus ?

1. Oui 2. Non

↳ **C5.A. Est-ce que vous dormiez à l'écart des autres membres de la famille ?**

1. Oui 2. Non

C5.B. Est-ce que vous preniez vos repas à l'écart des autres membres de la famille ?

1. Oui 2. Non

C5.C. Au bout de combien de temps avez-vous pu vous joindre au reste de la famille ?

/ __ / __ / jours

C5.D. Est-ce que cette expérience a été difficile ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C6. Actuellement, êtes-vous inquiet qu'un membre de la cuisine attrape le coronavirus ?

1. Très inquiet 2. Plutôt inquiet 3. Plutôt pas inquiet 4. Pas inquiet du tout

C7. Pour vous-même, pensez-vous que votre risque d'attraper le Coronavirus est ?

1. Très faible
 2. Plutôt faible
 3. Plutôt élevé
 4. Très élevé

C8. Par rapport aux hommes/femmes de votre âge, est-ce que vous pensez que votre risque d'attraper le Coronavirus est :

1. Beaucoup moins importants que pour les autres hommes/femmes de mon âge
 2. Moins importants que pour les autres hommes/femmes de mon âge
 3. Ni plus ni moins importants que pour les autres hommes/femmes de mon âge
 4. Plus importants que pour les autres hommes/femmes de mon âge
 5. Beaucoup plus importants que pour les autres hommes/femmes de mon âge

C9. Si vous ou un membre de votre famille attrapait le Coronavirus, où iriez-vous pour les soins ?

1. Poste de Santé 2. Guérisseur 3. Autre ; Préciser _____

C10. Pensez-vous à un médicament pour soigner le coronavirus ?

1. Oui 2. Non

C10A. Si oui, lequel ? _____

C11. En général, craignez-vous d'acheter de faux médicaments ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C12. En général, êtes-vous réticent(e) à l'idée de vous faire vacciner ?

1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

C13. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez vous faire vacciner ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

Si C16=3 ou 4 : C16A. Pour quelles raisons ne vous feriez-vous pas vacciner ?

1. Vous êtes contre la vaccination en général
 2. Vous pensez qu'un vaccin élaboré dans l'urgence est trop dangereux
 3. Vous pensez que c'est inutile parce que le COVID-19 est peu dangereux
 4. Autre : _____

C14. Si un vaccin contre le Coronavirus était disponible et gratuit, est-ce que vous voudriez faire vacciner vos enfants ?

1. Oui, certainement 2. Oui, probablement 3. Non, probablement pas 4. Non, certainement pas

1 **C16. Connaissez-vous des personnes dans votre famille, ou parmi vos amis ou connaissances, qui sont, ou**
2 **qui ont été malades du Coronavirus ?**

- 3 1. Oui, dans la famille 2. Oui, parmi les amis ou connaissances
4 3. Oui, à la fois dans la famille et parmi les amis ou connaissances 3. Non

7 **C17. Selon vous, est-ce que le couvre-feu dans le bassin de Niakhar est nécessaire pour limiter**
8 **l'épidémie de Coronavirus?**

- 10 1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

12 **C18. Selon vous, est-ce que le couvre-feu dans les villes permet de limiter l'épidémie de Coronavirus ?**

- 14 1. Oui, tout à fait 2. Oui, plutôt 3. Non, plutôt pas 4. Non, pas du tout

16 **C19. Selon vous, qu'est-ce qui est préférable ?**

- 17 1. Imposer le couvre-feu seulement dans les zones où il y a des malades du Coronavirus
18 2. Imposer le couvre-feu dans tout le Sénégal pour que tous les citoyens vivent la même chose
19 3. Ne pas imposer de couvre-feu du tout parce qu'il y a peu de malades au Sénégal

23 **C20. Selon vous, dans combien de temps est-ce que l'épidémie de Coronavirus sera terminée ?**
24 **(en mois ou en semaines)**

25 |__|__| mois **OU** |__|__| semaines

QUELLE EST VOTRE PERCEPTION DES RISQUES DE CORONAVIRUS ?

PR1. A quel point la possibilité d'attraper le Coronavirus vous inquiète-t-elle ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR2. Selon vous, quelle est la contagiosité du Coronavirus, c'est-à-dire la facilité avec laquelle ce virus peut se transmettre d'une personne à l'autre ?

Donnez une note entre 0 et 10 : la note 0 signifie que le Coronavirus est très peu contagieux et la note 10 qu'il est vraiment très contagieux.

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

PR3. Selon vous, quelle est la gravité du Coronavirus ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le Coronavirus n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

PR4. Selon vous, sur 100 personnes qui attrapent le Coronavirus, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

ET POUR LE PALUDISME ?

PR1BIS. A quel point la possibilité d'attraper le paludisme vous inquiète-t-il ?

Donnez une note entre 0 et 10 : la note 0 signifie que ça ne vous inquiète pas du tout, et la note 10 que ça vous inquiète énormément.

0	1	2	3	4	5	6	7	8	9	10
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PR3BIS. Selon vous, quelle est la gravité du paludisme ?

Donnez une note entre 0 et 10 : la note 0 signifie qu'attraper le paludisme n'est pas du tout grave et la note 10 que c'est vraiment très grave.

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

PR4BIS. Selon vous, sur 100 personnes qui attrapent le paludisme, combien d'entre elles pourraient mourir des suites de la maladie ?

Donnez un nombre entre 0 et 100 : / _ / _ / _ / personnes

D1. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur votre vie personnelle en général ?

- 1. C'est très négatif
- 2. Il y a plus de mauvais que du bon
- 3. En fait, ça ne change pas grand chose par rapport à ma vie d'avant
- 4. Il y a plus de bon que de mauvais
- 5. C'est très positif

D2. Comment évaluez-vous l'impact de l'épidémie de Coronavirus sur la cuisine ?

- 1. C'est très négatif
- 2. Il y a plus de mauvais que du bon
- 3. En fait, ça ne change pas grand chose par rapport à avant
- 4. Il y a plus de bon que de mauvais
- 5. C'est très positif

D3. A propos du Coronavirus, on entend beaucoup de choses. Etes-vous d'accord avec les affirmations suivantes ?

D3A. Le COVID-19, c'est surtout une maladie de blanc.

- 1. D'accord
- 2. Pas d'accord

D3B. Le COVID-19, c'est surtout une maladie des villes.

- 1. D'accord
- 2. Pas d'accord

D3C. Le COVID-19, c'est juste une grippe.

- 1. D'accord
- 2. Pas d'accord

D3D. Le COVID-19, c'est une punition divine.

- 1. D'accord
- 2. Pas d'accord

D3E. On peut se protéger ou guérir du COVID-19 en mangeant certains aliments (ail, gingembre, citron vert...).

- 1. D'accord
- 2. Pas d'accord

D3F. On peut se protéger ou guérir du COVID-19 grâce à la prière.

- 1. D'accord
- 2. Pas d'accord

D3G. On peut se protéger ou guérir du COVID-19 grâce à la médecine traditionnelle.

- 1. D'accord
- 2. Pas d'accord

D3H. On peut se protéger ou guérir du COVID-19 grâce à des antibiotiques.

- 1. D'accord
- 2. Pas d'accord

D3I. Le COVID-19 se transmet par les moustiques.

- 1. D'accord
- 2. Pas d'accord

D3J. Le COVID-19 se transmet par l'air.

- 1. D'accord
- 2. Pas d'accord

D3K. Le COVID-19 se transmet par les ondes 5G.

- 1. D'accord
- 2. Pas d'accord

D3L. Le COVID-19 disparaît au soleil ou quand il fait chaud.

- 1. D'accord
- 2. Pas d'accord

POUR TERMINER...

D1. Comment vous sentez-vous aujourd'hui, sur une échelle de 0 à 10 (indiquez votre réponse entre 0 (Tout à fait mal) et 10 (Tout à fait bien))

Tout à fait mal									Tout à fait bien	
0	1	2	3	4	5	6	7	8	9	10

D2. Selon vous, est-ce que le chef de ménage et sa (première) épouse sont inquiets qu'un membre de la cuisine attrape le Coronavirus ?

1. Très inquiets
 2. Plutôt inquiets
 3. Plutôt pas inquiets
 4. Pas inquiets du tout

D3. Quel est votre statut matrimonial ?

1. Marié(e)
 2. Célibataire
 3. Veuf(ve)
 4. Divorcé(e)

D4. Si vous êtes marié(e), êtes-vous dans une union...

1. Polygame
 2. Monogame
 3. Non concerné (non marié)

D5. Avez-vous des enfants ?

1. Oui 2. Non

D6. Si D4=1 : Combien ? _____ de quel(s) âge(s) ? _____

D7. Quelle est votre activité principale (celle qui vous prend le plus de votre temps) : _____

D8. Dans cette activité, vous travaillez comme : (une seule réponse possible)

1. Fonctionnaire
 2. Salarié avec un contrat écrit
 3. Salarié avec un accord oral
 4. Indépendant à votre compte et sans employé
 5. Entrepreneur ou patron, avec employé(s)
 6. Apprenti
 7. Aide familiale

D9. Est-ce que votre activité est dans le secteur ?

1. Des transports
 2. De la pêche
 3. Du tourisme
 3. Non, un autre secteur

D10. Si, au cours des 12 derniers mois, vous n'avez pas travaillé et vous n'avez pas eu d'activité économique, quelle est votre situation actuelle ?

1. En recherche d'emploi
 2. Personne âgée ne travaillant plus/ retraité(e)
 3. Etude/ formation
 4. Invalidité/ handicap permanent/ longue maladie
 5. Autre sans occupation (personne au foyer)