



# Wellcome Global Monitor

Questionnaire Development Information  
for Mental Health Report

Wave II: 2020

2020

GALLUP

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# Introduction

The first wave of the Wellcome Global Monitor survey in 2018 focused on understanding how people around the world think and feel about health, science and scientists, a key area of interest to Wellcome<sup>1</sup>. This included trust in science and scientists, interest in and engagement with science and health, attitudes to vaccines and attitudes towards science in relation to other key institutions in society, such as religion and government. The results and analyses from the first wave<sup>2</sup> helped increase understanding and build a foundation for the next wave of this research: the 2020 Wellcome Global Monitor survey.

This report describes the research approach and guiding principles used to design the mental health questions for Wave II of the Wellcome Global Monitor. New questions were included<sup>3</sup> and the development of those will be described in subsequent report releases.

The approach uses similar steps to the questionnaire development stage of the first wave and includes cognitive testing of the questionnaire and using the results to refine it.

As part of the questionnaire development process, Gallup researchers conducted interviews with a number of internal stakeholders from the Wellcome team as well as with several external stakeholders who were identified as subject matter experts. Both types of stakeholders were selected through independent research and suggestions by the Wellcome team.

Each type of stakeholder interview was included to serve a specific purpose. Internal stakeholder interviews with members of the Wellcome team helped clarify the research objectives of the second wave of the study, particularly how those objectives fit in with Wellcome's broader portfolio of work and how it envisions the data will be useful and utilised. On the other hand, the external stakeholder interviews aimed to collect more knowledge and expertise on the topics under study – particularly to learn which questions these stakeholders and their wider research communities would find the most useful and insightful.

Gallup consultants interviewed a total of nine external subject matter experts: Somnath Chatterji (WHO), Priscilla Idele (UNICEF), Devora Kestel (World Health

Organization), Tiffany Lohwater (American Association for the Advancement of Science), Elisha London (United for Global Mental Health), Vikram Patel (Harvard University), Shekhar Saxena (Harvard University), Guy Thwaites (Oxford University Clinical Research Unit) and Peter Varnum (World Economic Forum).

In general, these experts were very supportive of conducting a global survey that would include questions on mental health. They noted there is a dearth of information and data on this topic in many countries around the world, especially those that are less economically developed. From their perspective, data from Wave II of the Wellcome Global Monitor could aim to fill that gap and provide important insights into people's mental health status around the world.

The feedback and recommendations from the experts who were interviewed as part of the research process provided vital insights, especially when developing the mental health items. The experts contributed substantially to our understanding of the topics under study and helped identify some areas of interest to the research community and practitioners while maintaining the focus on Wellcome's specific aims for the survey. The main findings from these interviews are summarised below.

## Mental Health

- Mental health is an issue that touches all people; as a result, it is important to gain a better understanding of the topic at a global level and explore country and geographical variation in attitudes and experiences.
- The topic of mental health is gaining international recognition as an area that should be given much more attention as a central health concern; the timing of this global study is therefore very pertinent.
- Given the wide range of mental health issues that could be studied, it is important to provide a definition of what is meant by 'mental health' or 'mental health problems' early in the questionnaire if those terms are to be used in the survey.
- It would be interesting to learn about the public's views on the provision and quality of mental health support and treatments offered through national health care systems.

- It may be important to know whom people consult or turn to for support and help when they experience mental health problems. Suggested questions included:
  - Have you, or someone close to you, ever experienced mental health problems?
  - If you have experienced mental health problems, did you talk to anyone about them? If yes, who did you talk to – your physician, a trained specialist, family and friends, religious leaders, etc.?
  - Was this helpful?
  - What type of things did you do to help alleviate the mental health problems you experienced?
- The mental health module should ask about the stigmatisation associated with mental health problems. In some cultures, people feel uncomfortable talking about mental illnesses, as they may face stigmatisation, be blamed for having a mental health condition, become victims of superstitions or be ‘punished’ by law.
- The relationship between mental and physical health is an interesting topic to explore. Suggested questions regarding this topic included:
  - Do people think mental health is worth studying as a science that could help people feel better?
  - Do people believe mental health is an essential component of overall physical health?
  - Do people consider mental illnesses as important as other illnesses, such as the flu, heart disease or cancer?
  - Do people agree or disagree that governments need to invest more in finding treatments for mental illness and making them available to people?
- It may be helpful to explore people’s views regarding what constitutes a healthy emotional mental state and how much people feel they know about mental health.
- People’s attitudes towards mental health are influenced most strongly by whether or not they, or someone close to them, have personally experienced a mental health problem. Additionally, having information on the issue has the potential to change people’s perspectives and views.
- Suggested questions to explore the prevention or overcoming of mental health problems included:
  - What do people think they can do to prevent mental health problems from arising?
  - What can people do to ensure they maintain a healthy state of mind?
  - What do people do to overcome mental illnesses? For instance, do they exercise, sleep, interact socially, practice mindfulness, eat healthily, spend more time ‘in nature’ or go to the countryside, seek medical health care, etc.?
  - What would people do to try to help themselves if they were experiencing things like depression or extreme anxiety for two to three weeks or more?
  - What do people think are some of the causes of mental illness? For example, social causes, genetics, stress, environmental causes, etc.?
- Young people’s views and experiences of mental health problems is an area of great interest. In recent years, efforts to better understand and provide support to young people have increased, especially considering the mental health problems that seem to be arising from the use of social media.
- When it comes to terminology, stakeholders suggested that ‘mental disorders’ or ‘mental illnesses’ may be better terms to use than ‘mental health problems’. Similarly, when referring to mental disorders/mental illnesses, Wellcome was advised to give examples, such as ‘anxiety’ and ‘depression’. Words such as ‘wellbeing’ or ‘emotional pain’ were also suggested as alternatives to ‘mental health’ and ‘mental illness’.
- Regarding the dissemination of the findings, there are many events at which the findings could be presented (e.g., WEF, UN Assembly, The World Bank, Speak Your Mind Summit).

# Cognitive Interview and Pre-Testing

## Key Objectives of Cognitive Interview Testing

The first draft of the questionnaire was developed in close collaboration with the Wellcome team, and there was substantial input from the literature review, previous surveys on the selected topics and interviews with internal and external subject matter experts. In the next step, Gallup conducted cognitive interviews to test the newly developed items for the 2020 questionnaire in order to identify any issues with the comprehension of each question.

Cognitive interview testing involves conducting in-depth semi-structured interviews with respondents across different, key demographics. The aim is to explore the respondents' thought processes when they answer in order to assess how they understand each question and arrive at their answer.

The main purpose of cognitive interview testing is to explore how well questions perform – are the people being interviewed understanding and interpreting them correctly (i.e., as they were intended to be understood)? And are the concepts being asked about being captured accurately and therefore resulting in responses that are reliable and accurate? Respondents go through four basic stages when answering a question:

1. Comprehending the question
2. Retrieving information from memory
3. Evaluating the information
4. Providing a response in the format requested

Inaccurate responses to survey questions often involve misunderstanding the question, memory error when retrieving the relevant information to answer the question, error when working out what answer to give when the information retrieved is insufficient to answer the question, and bias introduced by the respondent's desire to give a socially acceptable response.

Cognitive interviews are particularly important for multicultural studies because respondents in different countries have different cultural norms and customs, which can affect how they interpret a given question. Even within the same country, respondents sometimes interpret the same question in the same language

differently, due – for example – to different levels of education or residing in different regions.

This is particularly the case where terminology in a questionnaire may not be common or easily understood. As a result, cognitive interview participants should always include a mix of genders, ages, education levels and socioeconomic statuses as well as participants from both urban and rural locations.

During a cognitive interview, specially trained qualitative interviewers administer the survey questions using a variety of methodologies and probes. A cognitive testing exercise is a means to analyse feedback from respondents and identify problem questions, or other problematic aspects of the survey, so that adjustments can be made before the questionnaire is finalised. In addition, the cognitive interview process helps identify questions that could potentially alienate respondents (e.g., by asking about particularly sensitive topics) or be burdensome to answer, risking low response rates.

For the cognitive interview testing of the Wellcome Global Monitor Wave II questionnaire, Gallup recruited individuals from varying demographic backgrounds and examined respondent comprehension, item relevance from a respondent perspective, the suitability of each set of response options and the flow of the instrument. In total, 101 individuals across 10 culturally and linguistically diverse countries participated in the cognitive interview tests. The countries were selected to reflect different levels of economic development, cultures and geographies:

Colombia (10 participants), Egypt (10), France (10), India (10), Indonesia (10), Kenya (10), Nigeria (10), South Africa (10), Thailand (10) and Vietnam (11).

The testing process identified adjustments and refinements that were needed, and these were implemented to reduce the rate of Don't Know or Refused responses to help ensure respondents felt comfortable answering each question. Importantly, changes to the questionnaire reviewed during this process were universally implemented – that is, these changes were made to the whole survey, which was originally produced in English and then translated into other languages.

## Main Topics Covered by the Cognitive Interviewing Questionnaire

The cognitive interviews were typically 40-100 minutes in duration, with an average of 60 minutes across all countries. They included not only a wide array of topics but also many more questions than could ultimately be included in the final questionnaire. This approach allowed the Wellcome team to gain additional insights into how all of the questions performed, even if they were ultimately not selected for this wave; they still provided an opportunity for additional analytical testing (e.g., the comprehension of specific technical terms like 'climate change'). All verbatim items investigated (where people could give their own answer as opposed to being given a list of answer options) were excluded from the final questionnaire.

With very few exceptions, the topics covered in the cognitive interviews were related to potential new questions for the 2020 questionnaire. This is because the 'core' questions, i.e., those that will be repeated in each wave to monitor trends and changes over time in key topics of interest for Wellcome, had already been tested in the first wave of the study in 2018<sup>3</sup>.

The 2020 Wellcome Global Monitor mental health questions tested in cognitive interviews can be grouped into the following main topics:

Open-ended general questions. These questions required verbatim responses and were asked to measure comprehension of terms such as 'science', 'scientists', 'observation' and 'testing', not to test the questions themselves. One new question was added in this series to ask about the impact of science on various aspects of people's lives.

Mental health, with a focus on anxiety, stress or depression. These questions centred around three types of mental illnesses: anxiety, stress and depression. Questions on these topics included whether or not people feel that science can contribute to the study of mental health (i.e., mental health as a science) or that the study of mental health is as important as that of physical health. This section also included questions concerning the stigma associated with mental illness – whether or not people feel comfortable speaking about it and whether the respondents themselves, or people close to them, have experienced anxiety, stress or depression. Interviewers also inquired about what treatments, if any, people had sought to make themselves feel mentally healthier.

Factual science knowledge questions. A few questions were asked to determine the extent of people's 'factual' knowledge of science, such as asking whether the earth revolves around the sun,

whether antibiotics are used to treat bacteria or viruses, whether the oxygen that we breathe comes from plants and the meaning of human 'evolution'.

Demographics. Key demographic characteristics were captured during interviews to help analyse and understand the results. These included gender, age, education, rural/urban residence, income grouping (high, middle or low) and use of social media.

## Summary of Wellcome Global Monitor Cognitive Interview Findings

Given the wide range of topics covered in the cognitive interview questionnaire, the findings were vital in determining which mental health questions to include in the final questionnaire, particularly considering Wellcome's priorities for the survey. Gallup used a similar process to the one described in Section III of the Questionnaire Development Report for the 2018 Wellcome Global Monitor, including:

- removing or improving questions that were not well understood or that caused respondent burden
- retaining questions which measure topics that are priority research areas for Wellcome
- modifying questions to ensure the concepts or topics are well understood
- retaining questions which can be meaningfully asked in over 140 countries

A summary of the findings by topic is presented below.

## Open-ended General Questions

Across several of the above-listed topics, Gallup asked respondents open-ended questions for which the responses were recorded verbatim. These questions were designed to obtain a better understanding of how people understand certain terms and gave an indication of how well questions on these topics might be understood by respondents. The findings were very informative in shaping the wording of the final items; however, none of the open-ended questions were included in the final questionnaire due to the impracticalities of recording and translating verbatim responses in 100+ languages in the final survey

The open-ended general questions that were asked at the beginning of the questionnaire included:

- What does the word "science" mean to you?
- In your opinion, what does it mean to study something scientifically?
- What do you think 'observation' means in the context of science?
- What do you think 'testing' means in the context of science?

Broadly, most respondents had a general idea of what ‘science’ means. However, it was challenging for some people with a low education level to understand the concepts of science’ and ‘scientists’ and associated terminology. This finding mirrors that of the first wave of the Monitor in 2018.

With regard to being asked what the word ‘science’ means to them, many people mentioned words such as ‘research’, ‘knowledge’, ‘discovery’ and ‘technology’. For some respondents, science was associated with forecasting the future or, as one respondent in Thailand said, the ability “to make the impossible become possible”. At a country level, people in Egypt, Thailand and Indonesia were the most likely to find this question challenging to answer, especially those with a lower education level.

In answer to the question about what it means to study something scientifically, many responses included terms such as ‘learning’, ‘gaining knowledge’, ‘conducting research’, ‘testing’, ‘observation and reflection’ and ‘using equipment such as a microscope’ – although the term ‘study’ caused some people to mention school or education. Others indicated they did not know what this meant but still tried to provide an answer.

Similar results were noted for the question asking about the meaning of the words ‘observation’ and ‘testing’. A minority of respondents found it challenging to tell the difference between ‘science’ and ‘scientist’ when they were referenced in the context of a single question. As with other questions, these challenges tended to be experienced more by people with a lower level of education.

In addition to the questions listed above, interviewers read out the definition of ‘science’ that was used in the first wave of the Monitor so it could be verified that the definition was still generally well understood and valid. The definition also proved helpful in the analysis of people’s responses to certain questions.

This definition of ‘science’ is as follows:

When I say “science,” I mean the understanding we have about the world from observation and testing. When I say “scientists,” I mean people who study the planet Earth, nature and medicine, among other things. How much did you understand the meaning of “science” and “scientists” that was just read? A lot, some, not much, or not at all?

The findings were similar to the findings for the testing in the first wave: the definition was understood less by people with a very low level of education, but in general, it worked well.<sup>4</sup>

This indicated that using the same definition again in Wave II of the Monitor is suitable and reliable.

## Mental Health Items

As mentioned above, this is the key new focus area for the 2020 Wellcome Global Monitor. The section in the questionnaire dealing with this area is divided into four parts that each deal with one of the following four sub-topics: open-ended questions; mental health as a science; society’s attitudes to mental health issues; and personal experiences of anxiety, stress or depression.

Gallup used open-ended questions to better understand how people interpret key terms and issues related to mental health; open-ended responses are helpful when formulating response options for closed-end questions.

### 1. Main findings from the open-ended questions

The open-ended questions asked on this topic were:

- In your own words, what does “being healthy” mean to you?
- In your own words, what does the term “mental health” mean to you?
- In your own words, what does “bad mental health” mean to you?
- In your own words, what do each of the following terms mean to you? Anxious, stressed, depressed
- What do you think are the causes of extreme anxiety, stress or depression?

The main findings were:

1. All of the respondents had a general idea of what being healthy means. Themes such as good nutrition and not having an illness were the most common, along with having good physical health and feeling good emotionally.
2. Generally, there were variations in how people defined ‘mental health’. This is typical of open-ended questions that do not provide respondents with a context for why they are being asked about a topic (because they are intended to obtain ‘responses that could be described as being ‘off the top of one’s head’). Many respondents believed the term ‘mental health’ referred to the lack of a mental health problem or “being of sound mind”, as one Kenyan man said. But almost as many people believed the term had negative connotations, such as having a mental illness, being angry or being unable to control or deal with emotions. Some of the other common responses included believing it meant being in a good state of mind, having positive thoughts and feelings, and having emotional and psychological stability and wellbeing.

3. Respondents also understood 'bad mental health' in different ways. For some, the term meant that a person had some sort of mental problem; others associated 'bad mental health' with sadness, loneliness, stress or "always thinking negative stuff" (according to one participant from Colombia). Other people associated bad mental health with risky or bad behaviours, such as heavy drinking or drug use.
4. When asked about depression, the most common response was that it means feeling sad. Other responses included that it means being stressed, tired, isolated, unhappy or bored. For a few respondents, depression was associated with the inability to connect with others, for example one woman in Thailand said that depressed people "do not want to meet people and talk".
5. When respondents were asked what they thought anxiety meant, the majority of them mentioned worrying, being fearful/afraid and overthinking things. When asked what they understood regarding the term 'stressed', common responses included feeling overloaded or overwhelmed, feeling fatigued and having to deal with issues like finding a job. Several people saw no difference between being stressed and being anxious. In general, for the verbatim questions that asked about technical terms, respondents with a lower level of education tended to find it more challenging to respond, even though they often attempted to find language that expressed their feelings about these terms.

When asked "What do you think are the causes of extreme anxiety, stress or depression?", the most common responses were work and family problems. Some respondents said that 'chemical problems in the brain', 'bad spirits' or 'God's will' were causes. Others indicated that 'financial problems/debt/poverty and health problems' caused these mental health issues. Relationship problems were also mentioned by some respondents as possible causes of extreme anxiety, stress or depression. One French participant said: "Psychological wound, unexpected abandonment, humiliation, betrayal. It can come from parents, school background or your loved ones or someone you have loved." The main point of the open-ended questions was to measure the broad comprehension of the relevant concepts. In a few instances, responses to these items helped shape some of the questions on mental health in the questionnaire that were used at the pre-testing stage (for example, the comments made in point 5. Above led to the addition of some of the pre-coded response options for some questions). More broadly, the terms and phrases respondents found easy to understand across all countries were used, while

those that were confusing or difficult to understand were simplified or eliminated. Suggestions from interviewers and respondents were also taken into account to make the wording more easily understood across countries.

## 2. Mental health as a science

A few questions were asked to explore whether people believe mental health can be explained or treated by science, similarly to how it has been established that science can help treat people with physical health problems (e.g., through research, medicines and innovation).

Some of the questions that were tested included:

- How much do you think science can explain the way people behave?
- How much do you think science can explain the feelings and emotions people have?
- How much do you think science can explain how the body works?
- How much do you think science can help us understand how to PREVENT people from getting any of the following health problems: Cancer, malaria, Ebola, HIV Aids, extreme anxiety, stress or depression, the common cold, obesity, heart disease?
- How much do you think science can help us understand how to CURE or improve any of the following health problems: Cancer, malaria, Ebola, HIV Aids, extreme anxiety, stress or depression, the common cold, obesity, heart disease?
- How important do you think it is for the national government to fund research in the following areas of health: Cancer, malaria, Ebola, HIV Aids, extreme anxiety, stress or depression, the common cold, obesity, heart disease?

Some people with a low level of education did not see the relation between science and human behaviour, in part because they misunderstood the word 'science'. Many people indicated that they believe science can help us understand 'a lot' about preventing physical health problems, such as cancer, malaria, Ebola, HIV/Aids and heart disease. However, fewer people thought science can help us understand 'a lot' about preventing mental health problems such as extreme anxiety, stress or depression. In some countries, Ebola was not well understood in countries where it is less common, as it is less common in some countries; and in many instances, people could not differentiate between preventing and curing disease (or, in some cases, found it challenging to understand how science can prevent diseases at all). Moreover, the list of diseases seemed too long and burdensome.

Given this feedback, it was decided to reduce the list of diseases – retaining the ones most likely to be understood globally – refine the questions in the final questionnaire so that they were simpler and more easily understood, and only ask about ‘prevention’ or ‘cure’, given the limited variation in responses to the ‘prevention’ and ‘cure’ options. In addition, it was decided to exclude the item asking about science and human behaviour, as that item seemed less well understood.

### **3. Society’s attitudes towards mental health issues**

A few questions were asked to explore how people in society as a whole view mental health and mental illness, including items that allude to stigma and whether mental health is as important to people as physical health. These included:

- Thinking about a person’s overall health, do you think mental health is as important as physical health for a person’s wellbeing?
- In general, if someone in your local community was experiencing extreme anxiety or depression, how comfortable do you think they would feel speaking about it with someone they know?
- In general, how do you think most people in the city or area where you live view people who have extreme anxiety, stress or depression?
- In general, do you think most people in your local community would feel embarrassed to say they have extreme anxiety, stress or depression?

Nearly all people stated that mental health is as important as physical health for a person’s wellbeing. In fact, some people wanted there to be an option for mental health being ‘more important’ than physical health. When asked how most people in society view people who have extreme anxiety, stress or depression, some respondents said there are people who would want to help them, while others said people view them as being ‘crazy’ or do not want to be associated with them.

Given this feedback, it was decided to keep only the first two questions from the four items listed above. However, the framing of the first question would be amended to become more specific, as follows:

“Do you think mental health is more important, as important, or less important than physical health for a person’s wellbeing?”

### **4. Personal experiences**

The cognitive interview testing questionnaire included a few items asking people whether they have personally experienced anxiety, stress or depression to an extent that they could not continue with their regular daily activities as they normally would for two weeks or longer. The time period of two weeks or

longer was selected because of the advice in this respect given by the external subject matter experts who were interviewed on the subject. The intention was to distinguish between these experiences (i.e., clinically defined anxiety, stress or depression) and people feeling sad or worried due to, for example, a looming examination or losing a precious item. The question was also asked about friends or close family members (see below).

A series of follow-up questions were asked of people who responded in the affirmative – i.e., that they had experienced anxiety, stress or depression – to establish the age at which they felt that way, whether they had felt that way more than once, whether or not they had sought treatment or help and, if so, what type(s) of treatment they had used or found helpful. The treatment options asked about in the interviews were varied and included both medication- and non-medication-based approaches; the latter could have included actions such as talking to friends and family, talking to mental health professionals, talking to religious leaders or engaging in religious activities, meditation, reading self-help books and/or adopting healthy lifestyle behaviours.

These follow-up questions were designed to understand the variety of ways in which people might treat their own severe anxiety and depression and to challenge assumptions about how people in different cultures treat mental health and the stereotypes that can arise from these assumptions’. Furthermore, while there is much debate about access to different mental health treatments, there is less about the level of satisfaction with those services, which various items are also designed to highlight.

The follow-up questions that were asked in the cognitive interviews included:

- Thinking about your close friends and family members, have any of them ever been so anxious, stressed or depressed that they couldn’t continue with their regular daily activities as they normally would for two weeks or longer?
- And what about you, personally – have you ever been so anxious, stressed or depressed that you couldn’t continue with regular daily activities as you normally would for two weeks or longer?
- Just your best guess, about how old were you when you first felt this way?
- Have you felt this way more than once?
- Just your best guess, about how old were you when you LAST felt this way?
- Did you ever seek any type of help when you felt this way?
- What types of help did you seek?
- Of those different types of help you mentioned, which were you most satisfied with?

Most of the questions performed well in the testing, even though some people struggled with precise recall of how old they were when they first felt the way the question described. In some countries, 'help' was understood to mean 'general assistance' but not in a way that would indicate medicine, mental health practitioner support or other specific treatment options. This word was changed as appropriate for each language and was translated more specifically and carefully in the final questionnaire to better capture the intended meaning.

Overall, and taking into consideration all responses in the testing, it was decided to simplify the wording in some cases and, based on what respondents said in answer to the open-ended questions, to provide a closed-ended list of treatment/help options to capture responses more easily in the final survey. In addition, it was decided that definitions would be provided for the specific mental health challenges that would be asked about in the final questionnaire. It was thought that the definitions would help anchor the understanding and interpretation of these essential words on a global level with the same meaning; responses could then be reliably analysed and compared across countries.

An important conclusion was that, despite concerns that respondents would be reluctant to share their experiences of mental health problems or feel awkward doing so, cognitive testing found that people were generally willing to speak openly about them.

### Science Knowledge Items

Three topics were explored in the section of the cognitive interview questionnaire that dealt with knowledge about science: general 'factual' science knowledge, as proxied by a few questions; climate change; and human evolution.

The following question about factual science knowledge was tested:

- Please tell me if you think the following statements are definitely true, probably true, probably false, or definitely false. If you don't know, please say so:
  - The Earth revolves around the sun,
  - The oxygen we breathe comes from plants,
  - Smoking is a leading cause of some forms of cancer,
  - It is the mother's genes that decide whether a baby is a boy or a girl,
  - Electrons are smaller than atoms,
  - The four seasons on Earth are caused by the moon's rotation around the Earth,
  - Antibiotics kill viruses as well as bacteria,
  - Anyone can experience mental health problems.

The following questions about evolution were tested:

- Do you think humans have evolved to their current form from other living things over millions of years, or not?
- Which of the following statements comes closest to your view on the origins and development of human beings?
  - Human beings have developed over millions of years from other forms of life, but God guided the process,
  - Human beings have developed over millions of years from other forms of life, but God had no part in the process,
  - God created human beings pretty much in their present form at one time within the last the 10,000 years.

The question about factual science knowledge felt like a test for most people and made them uncomfortable, even though they were assured by interviewers it was not a test

Similarly, the term 'evolved' (relating to human evolution) was not well understood by people with a low education level. Moreover, the second question on evolution was not well understood in most countries. The response options were too lengthy and complex for most respondents, and it was noted that all the response options given assumed God is real – which could lead to a non-response by some respondents because in order to give an answer, they would need an answer option which did not make that assumption.

Overall, given the discomfort caused to respondents when asked these questions, it was decided not to include any of the factual science knowledge items or the items relating to human evolution in the final questionnaire.

### Finalising the Questionnaire for Pre-testing

The number of items chosen for cognitive testing far exceeded the available space on the survey for the second wave. Thus, a process was put in place to determine which topics and items would remain in the questionnaire for pre-testing. This process first entailed an analysis of data from wave one; items that had less impact on the analysis and subsequent report were removed. Second, the stakeholders decided on the key priority areas of interest for wave two – this helped inform decisions later on in the process. Next, the cognitive testing results were shared with key stakeholders. Topics and items that were not well understood during cognitive testing and were not in priority areas were removed. With only the most important items remaining,

the stakeholders voted on the items they thought were most relevant to the key priorities. The results from the cognitive interviews which asked about the items that received the most votes were scrutinised to refine item wording and make final decisions on what would be included in the questionnaire.

### Pre-testing of Wellcome Global Monitor: Summary of Results

A pre-test is a small-scale version of a study that is conducted in preparation for the full-scale survey. Pre-testing is helpful to estimate survey timing and refine translations, item response options, survey logic (i.e., skip patterns and question order), programming, interviewer instructions and consent. Importantly, pre-testing can highlight areas where logistical and practical challenges might arise, and it should inform the interviewers of the receptivity of the respondents to the survey. Therefore, unlike the cognitive testing interviews, feedback from pre-testing centres more on the operational and logistical aspects of survey implementation than on the cognitive aspects.

The Wellcome Global Monitor, Wave II questionnaire was pre-tested in 10 countries: Colombia, Thailand,

Indonesia, Egypt, India, Vietnam, France, South Africa, Nigeria and Kenya. These countries were the same ones that were included in the cognitive testing phase of this research, which provided a robust test of the survey in a diverse set of geographies, cultures and languages. At least 50 respondents were selected in each country, according to a balanced mix of key demographic characteristics including geographic location (urban/rural), gender, age, education and income. In some countries, the language of the interview was also a criterion in the recruitment of respondents. Local partners identified respondents through targeted recruiting, and recruitment was suspended once all the desired quotas had been met.

Most of the interviews were conducted at the residence of each respondent for the face-to-face mode of the survey's implementation. In this case study, the surveys were conducted using a Paper-and-Pencil Interviewing technique mode (PAPI). In France, respondents were interviewed over the phone, as the mode of implementation in the Gallup World Poll there is computer-assisted telephone interviewing (CATI). Gallup conducted an additional 11 interviews using the Gallup panel to determine how long the survey would take to administer in English via phone interviews.

## 2020 Wellcome Global Monitor Pre-test Interviews

Country	N	Mode	Language
Colombia	51	Face-to-face	Spanish
Thailand	53	Face-to-face	Thai
Indonesia	50	Face-to-face	Bahasa, Indonesian
Egypt	50	Face-to-face	Arabic
India	58	Face-to-face	Bengali, Hindi, Marathi, Tamil, Telugu
Vietnam	63	Face-to-face	Vietnamese
France	50	Telephone	French
South Africa	50	Face-to-face	English
Nigeria	50	Face-to-face	English, Yoruba
Kenya	52	Face-to-face	Swahili/Kiswahili, English
United States	11	Gallup Panel (Telephone)	English

The main findings from the pre-test interviews were:

1. Following the changes made to the questionnaire after the cognitive interview testing, the Wellcome Global Monitor questionnaire was estimated to take 10 minutes on average to administer – indicating that no further changes needed to be applied to the survey for timing purposes.
2. No difficulties were identified relating to skip patterns, the order of the questions, programming, coding, interviewer instructions or consent.
3. While the questions were generally understood and easy to administer, specific cases of translation challenges were discovered that helped refine the survey.
4. As with the first wave of the Monitor, the results suggested that individuals from lower socioeconomic backgrounds are less likely to offer an opinion on items touching on technical terms and topics that concern science and scientists. This was also true for items about climate change/global warming and evolution.
5. In general, there were slightly higher rates of Don't Know/Refused responses for the mental health items, perhaps due to the sensitive nature of the topic.
6. As an alternative science education item in place of the original (Wave I) science education item, Gallup tested an open-ended item that could be coded by the survey administrators instead of using closed-ended responses. The testing found that this allowed for an easier capture of the final level of formal education at which a person learned about science, and it takes less time to administer.

Please refer to Appendix D of the main report to see the final mental health questionnaire items.

# Appendix: Wellcome Rationale for Mental Health Questions

Question	Rationale
How much do you think science can explain each of the following – how the human body works or how feelings and emotions work?	The purpose of this question is to understand the public's relative belief that science can explain mental health compared to physical health
Thinking about a person's overall health, do you think mental health is more important, as important, or less important than physical health for a person's wellbeing?	The purpose of this question is to find out whether people see mental health as an important area of focus.
How much do you think science helps us treat the following health problems? – Cancer, extreme anxiety or depression etc.	The purpose of this question is to see whether people consider science for mental health differently from that for physical health.
How important do you think it is for the national government in this country to fund research in each of the following areas of health? – List as above	The purpose of this question is to see the relative importance people assign to science that concerns mental health relative to science that concerns other areas of health.
If someone in your local community was experiencing extreme anxiety or depression, how comfortable do you think they would feel speaking about it with someone they know?	The purpose of this question is to gauge community attitudes to mental health.
Thinking about your close friends and family members, have any of them ever been SO anxious or depressed that they could not continue with their regular daily activities as they normally would for two weeks or longer?	The purpose of this question is to measure the respondents' experience of mental health problems their friends or family have had – for contextual information.
Have you ever been SO anxious or depressed that you could not continue your regular daily activities as you normally would for two weeks or longer?	The purpose of this question is to measure the respondents' personal experience of mental health problems – for contextual information.
How old were you when you first felt this way?	The purpose of this question is to find out when the problems first started – for contextual information.
Have you felt this way more than once?	The purpose of this question is to measure when the problems first started – for contextual information.
When you were feeling SO anxious or depressed, did you ever do any of the following to make yourself feel better? – Talk to a mental health professional etc.	The purpose of this question is to measure the different approaches that the respondents used to address mental health problems.
Did you find the following very helpful, somewhat helpful, or not helpful in making you feel better? How about _____? – List as above	The purpose of this question is to measure the perceived impact of the different approaches that the respondents used to address mental health problems.

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## Endnotes

1. See <https://wellcome.ac.uk/reports/wellcome-global-monitor/2018>
2. All the results, analyses and data from the survey are published at: <https://wellcome.ac.uk/reports/wellcome-global-monitor/2018>
3. For the results, please see: [https://wellcome.ac.uk/sites/default/files/wellcome-global-monitor-questionnaire-development-report\\_0.pdf](https://wellcome.ac.uk/sites/default/files/wellcome-global-monitor-questionnaire-development-report_0.pdf)
4. The results of the testing of the first wave of the Wellcome Global Monitor (including the questions that are repeated in Wave II) can be found here: [https://wellcome.ac.uk/sites/default/files/wellcome-global-monitor-questionnaire-development-report\\_0.pdf](https://wellcome.ac.uk/sites/default/files/wellcome-global-monitor-questionnaire-development-report_0.pdf)

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