Saudi National Mental Health Survey
Technical Report
Partners & Collaborators

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International Collaborators
World Health Organization
Harvard University, Harvard Medical School (USA)
University of Michigan, Institute of Social Research, Ann Arbor (USA)

Abbreviations

WHO: World Health Organization
WMH: World Mental Health
KSA: Kingdom of Saudi Arabia
SNMHS: Saudi National Mental Health Survey
KFSH&RC: King Faisal Specialist Hospital and Research Centre
MOH: Ministry of Health
KSU: King Saud University
CIDI: Composite International Diagnostic Interview
OLAP: On-Line Analytical Processing
DSM-IV: Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition
SAMHA: Saudi Mental & Social Health Atlas
TRAPD: Translation, Review, Adjudication, Pretesting and Documentation
CAPI: Computer Assisted Personal Interview
ACASI: Audio Computer Assisted Self Interview
CTS: Call Ticketing System
A Message From His Royal Highness, __ Chairman of the Board of Trustees

Taking care of one’s health follows immediately after basic human needs such as eating, drinking and breathing. Mental disorders are one of the major health problems facing the community worldwide, thus, affecting all ages, both genders, and all social and income levels.

It is estimated that 450 million people worldwide suffer from mental disorders. Yet, there is a great concern regarding the large gap between the magnitude of the problem of mental disorders and the services available; this led to the launch of the World Mental Health Survey by the World Health Organization.

The Saudi National Mental Health Survey is an extension of this initiative, led by a group of competent Saudi researchers, with the support and cooperation of several governmental and private organizations, and local and international scientific institutions.

The research took eight years, during which the research team visited various regions of the Kingdom to interview more than 4,000 men and women, from more than 2000 families. The interviews were carried out using the highest quality standards of scientific and ethical conduct.

Given this, the King Salman Center for Disability Research is pleased to be the incubator for this outstanding national project, and presents it as a gift to this honourable country and its devoted people.

Prince Sultan bin Salman bin Abdulaziz,
Chairman of the Board of Trustees
King Salman Center for Disability Research

Foreword from Principal Investigators

In the name of Allah, the Most Compassionate, the Most Merciful

Professionals and those interested in mental health have for a very long time envisaged the idea of conducting a National Mental Health Survey and hoped that they would be presented with the right circumstances to embark on this mission.

Since the launch of the National Mental Health Survey (Health and Stress), we knew that this task was by no means going to be easy and that the effort needed to accomplish it would be enormous. However, we remained determined to complete and achieve this task according to the best professional and scientific standards.

It was a path laden with enthusiasm, challenges and obstacles. Every time we felt dismayed, we gathered our strength and honed our abilities as we remembered the noble purpose, great value and substantial need of this project in our beloved homeland and society.

Today as we are on the final threshold of this honorable project, we proudly look back upon the past years and know that our efforts, by God’s grace, were not in vain. This project was a school, where many young men and women sharpened their experiences, broadened their capacities and learned abundantly. We thank the great and wonderful team for all that they have done. We thank the supporters and the sponsors from the government, private sectors and civil society organizations for their constant support for this national project.

Finally, we ask Allah, the Exalted, the Majestic, to preserve our country and our leaders. May the peace, mercy and blessings of Allah be with you.

Dr. Yasmin Al Twaijri,
King Faisal Specialist Hospital and Research Centre

Professor Abdullah Al Subaie,
King Saud University (Ret.)/Edrak Medical Center

Dr. Abdulhamid Al Habeeb,
Ministry of Health
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**Vibrant Society**

The happiness and fulfillment of citizens and residents can only be achieved through promoting physical, psychological and social well-being. At the heart of our Vision is a society in which all enjoy a good quality of life, a healthy lifestyle and an attractive living environment.
Executive Summary
Executive Summary

World Mental Health Survey Initiative

Mental health disorders are a major public health problem worldwide. This led the World Health Organization (WHO) to start the World Mental Health (WMH) Survey Initiative in collaboration with Harvard University. In 2010, Kingdom of Saudi Arabia (KSA) launched the Saudi National Mental Health Survey (SNMHS), as part of the WMH Survey Initiative which has been conducted in more than 33 countries so far.

Saudi National Mental Health Survey

The SNMHS is a state-of-the-art national survey that aims to understand all aspects of mental health in KSA. The study aims to understand:

(i) the prevalence of mental health problems and its burden in the Saudi community;
(ii) the individuals who are most at-risk in KSA;
(iii) the best ways of offering mental health services in KSA.

This project is important in providing a vision for clinicians and health policy makers to establish relevant preventive, therapeutic, and rehabilitation services in the Kingdom.

Methods

In December 2016, the SNMHS successfully completed interviews with a sample of 4,004 male and female Saudis, between the ages of 15 to 65, who represented the Saudi population. The questionnaire used for the interviews was the Saudi version of the Composite International Diagnostic Interview (CIDI 3.0). The interviews were conducted in the homes of the respondents using laptops for excellent accuracy and quality. The SNMHS also collected over 2000 saliva samples from its respondents after obtaining additional consent from them. All saliva samples were sent to genetics labs at King Faisal Specialist Hospital & Research Center (Riyadh) for further analyses. The DNA specimens from these samples will be used to study genetic risk factors for mental health conditions prevalent in the Saudi population.

Findings

- 34% of Saudis meet the criteria for a mental health condition sometime in their life.
- 80% of Saudis with severe mental health disorders do not seek any treatment.
- 8.9% of Saudis with severe mental health disorders seek treatment from a religious or non-medical healer.
- 2 in 5 Saudi Youth meet the criteria for a mental health condition sometime in their life.
- Only 13.6% of Saudis seek treatment for their mental health condition in a given year.

The most prevalent mental health conditions in the Kingdom are: Separation Anxiety Disorder, Attention Deficit Hyperactivity Disorder, Major Depressive Disorder, Social Phobia and Obsessive Compulsive Disorder.
Mental health disorders are a major public health problem worldwide, affecting people of all ages, cultures and socio-economic status. They cause serious impairments in personal, social and occupational functioning, which lead to substantial societal costs related to productivity and use of health care services. In 2010, the Kingdom of Saudi Arabia (KSA) became the first country from the Gulf Cooperation Council states to join the World Mental Health (WMH) Survey Initiative, which is led in collaboration with Harvard University, and has been undertaken by over 33 countries so far. This initiative was launched to bridge the gap between mental health service demand and supply.

Mental health disorders are a public health issue in Saudi Arabia, similar to the rest of the world. Previous research studies on mental disorders in KSA have focused on specific populations (e.g. hospital patients, primary healthcare centers or students), region-specific community samples and specific disorders (e.g. depression). Given the known impact and cost of various mental disorders on the individual and society, there was a great need for a national community study of mental health in Saudi Arabia, to clarify the current status of mental health in the population as a whole, and to guide national mental health policy, treatment and research.

The Saudi National Mental Health Survey (SNMHS) is conducted by the King Salman Center for Disability Research. Its supporting partners include the King Faisal Specialist Hospital and Research Centre, the Ministry of Health (MOH), the General Authority for Statistics at the Ministry of Economy and Planning, and King Saud University (KSU) in collaboration with the World Health Organization, Harvard University, and the University of Michigan, Ann Arbor. The survey is funded by SABIC, the King Abdulaziz City for Science and Technology, the MOH and KSU.
The SNMHS is a state-of-the-art health survey, which aims to estimate the burden of mental health disorders in the KSA. Its objectives include understanding (i) the prevalence of mental health problems, (ii) the individuals who are most at-risk in KSA, and (iii) the best ways of offering mental health services in KSA. The survey used a nationally representative sample of 4,004 male and female Saudis between the ages of 15 and 65, who were selected randomly. Face-to-face interviews using the survey instrument, i.e. the Saudi version of the Composite International Diagnostic Interview (CIDI 3.0), were conducted in the homes of the participants via laptops to ensure excellent accuracy and quality of data collected.

The SNMHS also collected saliva samples from its respondents, to determine genetic factors for mental health conditions in the Saudi population. Findings from the SNMHS will also provide estimates on family caregiving burden, dementia, religiosity, polygamy, suicidality and the societal infrastructure in mental health, emphasizing mental health needs specific to the Saudi population.

This project is important in providing a vision for clinicians and health policy makers to establish relevant preventive, therapeutic, and rehabilitation services in the Kingdom. It will present an opportunity to improve the treatment and status of mental health conditions through establishing national intervention programs for the Saudi population. Its findings will be utilized for health promotion and will contribute in the efforts to remove the stigma associated with mental health problems.
Survey Interviews

The map shows the total number of completed interviews and response rates in various areas across Saudi Arabia.

The survey response rate and total sample in Saudi Arabia is comparable to:

- **Saudi Arabia**: 61% (4,004 completed interviews)
- **Lebanon**: 70% (2,857)
- **South Africa**: 87.1% (4,351)
- **Eastern Province (518)**: 76%
- **Al-Jouf (323)**: 78%
- **Northern Frontier (54)**: 90%
- **Tabouk (163)**: 71%
- **Hail (133)**: 73%
- **Al Qasseem (271)**: 68%
- **Riyadh (980)**: 62%
- **Makkah (825)**: 83%
- **Al-Baha (140)**: 83%
- **Al-Baha (310)**: 76%
- **Asir (310)**: 76%

Total sample is 4,004 completed interviews
Response rate is 61%
Cooperation rate 76%

Findings

The occurrence of mental health conditions across lifetime in Saudi Arabia is comparable to:

- **Saudi Arabia**: 34% (66% of Saudis are diagnosed with a mental health condition sometime in their life)
- **Netherlands**: 34.2%
- **New Zealand**: 39.3%
- **France**: 47.4%
- **United States**: 47.4%
- **South Africa**: 31.7%
- **United States**: 66%
- **Australia**: 60%
- **Lebanon**: 70%
- **United States**: 70.9%
- **South Africa**: 87.1%
- **United States**: 87.1%
- **South Africa**: 9,282
- **Saudi Arabia**: 34%

The occurrence of mental health conditions across lifetime in Saudi Arabia is comparable to:
Findings

Mental health conditions and education
Mental Health conditions are more prevalent among more educated Saudis.

These rates are similar to prevalence estimates of the European mental health study (Belgium, France, Germany, Italy, the Netherlands and Spain).

Mental health conditions and age
Mental Health conditions are more prevalent among Saudi youth.

The prevalence of mental health conditions among Saudi youth is comparable to:

United States: 52.4%
Saudi Arabia: 40%
Australia: 26%
European Countries: 13.7%

2 in 5 Saudi youth (age 24-15) are diagnosed with a mental health condition sometime in their life.
The most common mental health conditions in KSA across lifetime

- Separation anxiety disorder: 11.9%
- Attention-deficit/hyperactivity disorder: 8.0%
- Major depressive disorder: 6.0%
- Social phobia: 5.6%
- Obsessive-compulsive disorder: 4.1%
- Post-traumatic stress disorder: 3.4%
- Intermittent explosive disorder: 3.3%
- Binge disorder: 3.3%
- Bulimia: 2.9%
- Drug abuse: 2.7%
- Agoraphobia without panic: 2.3%
- Generalized anxiety disorder: 1.9%
- Conduct disorder: 1.7%
- Panic disorder: 1.5%
- Drug dependence: 0.8%

Prevalence of treatments received for mental health conditions

Table below shows the percentage of Saudis who sought any type of treatment for their mental health condition.

Severity Levels of Mental Health Conditions

<table>
<thead>
<tr>
<th>Treatment Type</th>
<th>Serious %</th>
<th>Moderate %</th>
<th>Mild %</th>
<th>Any %</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Medical</td>
<td>8.9</td>
<td>4.1</td>
<td>8.8</td>
<td>7.2</td>
</tr>
<tr>
<td>Mental Health Specialty</td>
<td>6.8</td>
<td>3.7</td>
<td>2.1</td>
<td>4.5</td>
</tr>
<tr>
<td>Non-Healthcare*</td>
<td>8.9</td>
<td>2.6</td>
<td>1.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Any Treatment**</td>
<td>20.2</td>
<td>8.4</td>
<td>10.7</td>
<td>13.6</td>
</tr>
</tbody>
</table>

General medical includes general medical doctor or other health professional not in a mental-health setting.

Mental Health includes specialists such as psychiatrist, psychologist, and counselors.

*Non-Healthcare treatment includes spiritual and non-medical treatments.

**Any treatment is a combination of General Medical, Mental Health and Non-Healthcare treatments.

**Some people seek more than one type of treatment.
Findings

The most common mental health conditions in Saudi Females across lifetime

- Separation anxiety disorder: 13.0%
- Major depressive disorder: 8.9%
- Social phobia: 7.0%
- Attention-deficit/hyperactivity disorder: 6.0%
- Obsessive-compulsive disorder: 4.9%
- Post-traumatic stress disorder: 3.9%
- Binge disorder: 3.8%
- Agoraphobia: 3.2%
- Intermittent explosive disorder: 2.9%
- Generalized anxiety disorder: 2.9%
- Bipolar I-II: 2.7%
- Bulimia: 2.6%
- Drug abuse: 2.4%
- Panic disorder: 1.9%
- Conduct disorder: 1.5%
- Drug dependence: 0.8%

The most common mental health conditions in Saudi Males across lifetime

- Separation anxiety disorder: 11.0%
- Attention-deficit/hyperactivity disorder: 10.0%
- Social phobia: 4.3%
- Bipolar I-II: 4.0%
- Intermittent explosive disorder: 3.8%
- Obsessive-compulsive disorder: 3.4%
- Bulimia: 3.1%
- Major depressive disorder: 3.1%
- Drug abuse: 2.9%
- Post-traumatic stress disorder: 2.8%
- Binge disorder: 2.7%
- Conduct disorder: 1.9%
- Panic disorder: 1.3%
- Drug dependence: 0.9%
- Generalized anxiety disorder: 0.9%
Findings

The occurrence of depression conditions across lifetime

- 97% of Saudi females are diagnosed with depression sometime in their life
- 9% of Saudi males are diagnosed with a generalized anxiety disorder sometime in their life
- 1% of Saudi Males are diagnosed with Intermittent Explosive Disorder

The occurrence of generalized anxiety disorder across lifetime

- 91% of Saudi females are diagnosed with depression sometime in their life
- 3% of Saudi males are diagnosed with depression sometime in their life

Mental Health Disorders Description

**Generalized Anxiety Disorder**
- People with generalized anxiety disorder display excessive anxiety or nervousness for at least 6 months, about a number of things, such as personal health, work, social interactions, and everyday routine life circumstances.

**Panic Disorder**
- People with panic disorder have recurrent unexpected panic attacks. Panic attacks are sudden periods of intense fear that come on quickly and reach their peak within minutes.

**Social Phobia**
- People with social anxiety disorder have a general intense fear of, or anxiety toward, social or performance situations.

**Agoraphobia**
- People with agoraphobia have an intense fear of two or more of the following situations: (i) Being in open spaces, (ii) Being in enclosed spaces, (iii) Standing in line or being in a crowd, (iv) Being outside of the home alone.

**Obsessive-Compulsive Disorder**
- Obsessive-Compulsive Disorder is a repetitive and recurring behavior toward authority figures, continuing for at least 6 months and resulting in significant impairment in functioning.

**Post-Traumatic Stress Disorder**
- Post-Traumatic Stress Disorder is a disorder that develops in some people who have experienced a shocking, frightening, or dangerous event.

**Bipolar Disorder**
- Bipolar disorder, also known as manic-depressive illness, is a brain disorder that causes unusual shifts in mood, energy, activity levels, and the ability to think or act normally.

**Major Depressive Disorder**
- Major Depressive Disorder is a mental illness that can affect how one feels, thinks, and handles daily activities, such as sleeping, eating, or working.

**Drug Abuse**
- Drug abuse is characterized by the recurrent use of substances, often leading to failing to fulfill major role obligations (e.g. absence from work), repeated use in risky situations (e.g. while driving), multiple legal problems (e.g. arrest for disorderly conduct), and recurrent social and interpersonal problems (e.g. conflicts in marriage or divorce).

**Drug Dependence**
- People with drug dependence continue to use drugs (legal and/or illegal), despite significant physical or psychological problems caused by it. This pattern of repeated use usually results in tolerance (requiring more of a drug to achieve the same effect), withdrawal (negative symptoms as result of discontinuing the drug), and compulsive drug-taking behavior.

**Bulimia**
- People with bulimia have recurrent episodes of eating unusually large amounts of food and feeling a lack of control over these episodes. This is often followed by purging, excessive exercise, or fasting.

**Drug Dependence**
- People with drug dependence continue to use drugs (legal and/or illegal), despite significant physical or psychological problems caused by it. This pattern of repeated use usually results in tolerance (requiring more of a drug to achieve the same effect), withdrawal (negative symptoms as result of discontinuing the drug), and compulsive drug-taking behavior.

**Binge-eating Disorder**
- People with binge-eating disorder feel out of control over their eating. This is often followed by feelings of embarrassment, shame, guilt, and anger.

**Intergestive Hypertensitivity**
- Intergestive Hypertensitivity disorder (ADHD) is a brain disorder marked by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interfere with functioning or development.

**Conduct Disorder**
- People with conduct disorder exhibit a repetitive and persistent pattern of negativistic, hostile, and defiant behavior toward authority figures, continuing for at least 6 months and resulting in significant impairment in functioning.

**Intermittent Explosive Disorder**
- Intermittent Explosive Disorder is characterized by separated episodes of failure to resist aggressive impulses resulting in serious assaults or destruction of property.

**Separation anxiety disorder**
- People who have separation anxiety disorder fear having to be left alone, especially with people to whom they are attached (e.g. parent or spouse). Separation anxiety is often thought to be associated with children only, but it can also be diagnosed in adulthood as well.
The General Authority for Statistics (KSA) worked with the SNMHS on the sample design, preparing the proposal, and securing funds and resources. The Survey Cycle diagram illustrates the steps undertaken to implement the national survey:

- **Sample Design**
- **Questionnaire Design**
- **Cultural Adaptation of Survey Instrument**
- **Translation**
- **Instrument Technical Design**
- **Interviewer Recruitment, Selection & Training**
- **Data Collection**
- **Pretesting**
- **Data Processing & Statistical Adjustment**
- **Data Dissemination**
- **Ethical Considerations**

### Eligibility Criteria:
- Male and female Saudis between the ages of 15 and 65 from rural and urban regions of KSA.

### Additional Information:
- The WHO Composite International Diagnostic Interview (CIDI 3.0) is a diagnostic interview designed to be used by trained lay interviewers for the assessment of mental disorders.
- The original instrument was adapted and modified to suit the Saudi population.
- The TRAPD team translation model (translation, review, adjudication, pretesting & documentation) was implemented to translate CIDI 3.0 into Modern Standard Arabic.
- The adapted CIDI 3.0 was programmed with the help of University of Michigan, Ann Arbor to ensure the Arabic formatting was accurate and clear for use with CAPI.
- A pilot study was conducted to test all aspects of the survey & its results indicated its readiness to be implemented on a national scale.
- Cognitive interviews were designed to pretest the adapted CIDI 3.0; they investigated feedback differences in cognitive probes designed to pretest for question sensitivity.
- Using Survey Measures: Saudi version of CIDI 3.0 and DNA saliva samples.
- Data disseminated to the general public, scientific and medical community, and policy makers.
- Additional interviews over the phone were conducted for clinical validation, with a random sub-sample of the survey respondents using a gold standard interview known as SCID (Structured Clinical Interview for DSM-5).

The SNMHS carried out 649 telephone interviews, 229 face-to-face interviews and 3 recruitment seminars across Kingdom; and employed 94 interviewers during its data collection phase.
I. Screening & lifetime review

II. Disorders
   Mood    Major depression, mania
   Anxiety   Panic disorder, social phobia, agoraphobia, generalized anxiety disorder, post-traumatic stress disorder, obsessive-compulsive disorder
   Substance abuse  Alcohol dependence, illegal substance use
   Childhood    Attention-deficit/hyperactivity disorder, conduct disorder, separation anxiety disorder
   Other    Intermittent explosive disorder, premenstrual disorder, psychosis screen, eating disorder

III. Functioning & Suicidality, 30-day functioning, 30-day symptoms, physical comorbidity

IV. Treatment Services

V. Risk factors Personality, social satisfaction, childhood experiences, family burden

VI. Sociodemographics Employment, finances, marriage, children, demographics

VII. Country-specific Attitude towards alcohol use, religiosity, polygamy, disability, dementia, sections disability burden

Survey Instrument

Fieldwork Protocol

Interviewers were required to follow a strict protocol. They were required to contact a household member (the “informant”), introduce the study, and generate a listing of all non-institutionalized, ambulatory Arabic-speaking Saudi nationals between the ages of 15 and 65 who resided in that household as potential respondent(s). One eligible male and one eligible female were then randomly selected from this household listing as the designated household respondents. The designated household respondents were then approached and invited to participate in the survey after explaining study purposes, providing information on risks and benefits, and answering all questions before obtaining written informed consent.

When the interviewer was not able to contact any household member after 3 attempts to visit, a “no answer” letter was left at the household that attempted to encourage the household’s cooperation and provide a study phone number where potential respondents could call to make an appointment for a household visit. After leaving the letter if no one called the study number, a fourth/final attempt was made to try contacting any household member.

In case the selected respondent refused to participate, a standard resistance letter was sent that thanked the selected respondent for their consideration and requested them to rethink their decision. Interviewers then revisited the household after a few days to check if the selected respondent had changed his/her mind about participating in the survey.

Interviewers were required to make up to a maximum of 10 in-person visits to each sample household before the household was closed out as a final no-contact household (in case there was contact and cooperation during the other visits out of those 10). See the figure on the next page for an overview of interview scenarios in the field.
Fieldwork Protocol

No contact made with any HH members

- HH member is busy; an appointment is scheduled
- HH member refuses to do the screener

If in the final attempt, still no contact = final no contact

No eligible members selected for main IW

IWER visits the selected HH

- HH member agrees to do the screener
- Respondent is busy; an appointment is scheduled
- Respondent agrees to do the IW on the spot

IWER conducts screener with HH member

- HH member is busy; an appointment is scheduled
- IWER leaves a resistance letter after 2 days at the HH

If in the final attempt, still no contact = final refusal

After selection, respondent is imprisoned, suffers from permanent condition which prevents him from doing the IW, deceases, etc

IWER meets with respondent for appointment and conducts IW

- Respondent could not be reached
- Three consecutive attempts made but still no contact = final no contact
- Respondent refuses to do the IW
- IWER tries to convince respondent on second attempt*

Note: * Maximum number of attempts made was 10, only if contact was made in one of these attempts e.g. if the respondent was busy, an appointment was scheduled

Abbreviations
HH: household
IWER: interviewer
IW: interview

No contact for other reasons e.g. HH vacant, HH could not be found, HH is non-residential, etc

3 attempts* made to contact HH; no answer; letter is left

After another 2 days, IWER visits the HH to request to do a screener

- HH member refuses again = final refusal
- HH member agrees to do the screener

1 (male or female) or 2 (male and female) eligible HH members selected for main IW

Respondent refuses again = final refusal

After another 2 days, IWER visits the HH to request to do a screener
The SNMHS was one of the first surveys in the WMH consortium to use a dynamic sophisticated quality control dashboard employing the On-Line Analytical Processing (OLAP) technology developed by the University of Michigan, Ann Arbor. The use of these new and state-of-the-art quality control tools led to a high level of quality of the data collected, following which the SNMHS received recognition from the University of Michigan, Ann Arbor for exceptionally implementing its quality control procedures.

Ethical Considerations

The survey interviewers explained the study’s purpose, provided information on risks and benefits, and answered all questions before obtaining written informed consent. They also collected saliva samples from respondents after obtaining additional consent from them. Each interview was encrypted and transferred wirelessly from the survey laptop to an online secure server. The SNMHS also addressed all the privacy concerns of respondents by ensuring that the data provided by them was kept anonymous and confidential. All the study protocols were approved by the Institutional Review Board committee at the KFSH&RC, Riyadh.

How did the project ensure the quality of the interviewers’ performance?

Interventions

When the quality control team observed inconsistencies in the interviewer’s performance, they coordinated with fieldwork supervisors to intervene in the interviewers’ performance. These interventions comprised of recommended corrective actions (e.g. extended evaluation, retraining, suspension) or preventative actions (e.g. routine reminders of fieldwork protocols).

Evaluations

Interviewers were regularly evaluated to determine if they were employing their interviewing skills effectively and if they required any support. Fieldwork supervisors accompanied all the interviewers into the field and filled out individual evaluation forms on WebTrak. These evaluations allowed the survey team to track the interviewers’ progress, compare their performance with that of their peers, identify where they were making errors and advise them accordingly. This in turn also helped to improve interviewers’ ability, morale and productivity.

Verifications

Additionally, verifications were routinely conducted to detect if interviewers’ were following fieldwork protocols. The verification team carried out either phone or face-to-face verifications, where a verifier used a specified script to identify themselves and the project, and asked a small percentage of questions from the main interview to verify if the respondents’ answers matched. The SNMHS verified more than 20% of completed interviews, which was more than the average amount specified by University of Michigan, Ann Arbor and thereby passed all international standards of implementing quality procedures.
Key Technologies

CAPI

Computer Assisted Personal Interview  The SNMHS used the computerized version of the survey instrument, CIDI 3.0. The CAPI version reduced errors, eliminated the data entry step, and allowed for close monitoring and quality control of the fieldwork.

ACASI

Audio Computer Assisted Self Interview  The CIDI 3.0 also incorporated an ACASI component with a recorded voice that matched the gender of the respondent and allowed respondents to answer sensitive questions privately (e.g. on topics like marriage, religiosity, substance abuse and suicidality). With ACASI, respondents could put on head phones connected to the survey laptop, have questions read by a digital voice, and enter responses directly into the computer from the key pad without other people in the room knowing the nature of the questions or their answers.

Blaise

Blaise is a computer assisted interviewing system and survey processing tool for the Windows operating system. It is a powerful and flexible software package used worldwide for statistical and scientific research. It provided a wide variety of solutions, tools, and utilities including the ability to effectively conduct CAPI and ACASI.

TeamViewer

TeamViewer, a remote support software, was licensed and implemented by the SNMHS as it focuses on cloud-based technologies to enable online support and collaborate in real time across the globe. The SNMHS made use of this software whenever there was a need to remotely log in to interviewers’ laptop for IT support.

SurveyTrak

SurveyTrak, a Sample Management System was proprietary developed and tailored to the needs of the SNMHS at the Survey Research Center, Institute for Social Research, the University of Michigan, Ann Arbor. This program supported the interviewing efforts of the fieldwork and the survey management team by transferring completed screener and questionnaire data to a consolidate database.

OLAP

The University of Michigan, Ann Arbor survey team designed an On-Line Analytical Processing technology which the SNMHS referred to as the Quality Control Cube. This paradata Excel spreadsheet included questionnaire data and sample management data (SurveyTrak and WebTrak), which could be manipulated and explored using the Excel pivot functionality.

Webtrak

Information collected through SurveyTrak, was displayed in a user-friendly web interface called WebTrak, another proprietary tool developed at the Survey Research Center, Institute for Social Research, the University of Michigan, Ann Arbor. This tool was used by interviewers, supervisors, field managers, field coordinator, and the quality control team to monitor the status of selected cases. It primarily gave a holistic account of the fieldwork, especially in terms of paradata.
Future Directions
Future Directions

More interventions and research should be conducted in settings like schools and colleges where the youth spend the majority of their time. Based on the results of the SNMHS, it is apparent that mental health conditions are most prevalent among the Saudi youth. The SNMHS highly encourages future research to target this finding in particular and to build upon it, as the youth are a vital resource of every country.

More accessible services that cater to mental health needs of the Saudi population should be a primary objective on the policy agenda. A practical solution for research consideration could be e-treatments that can be safely and effectively delivered by professionals online to patients at home.

National studies in the KSA should consider giving more attention to populations not covered by the present survey: the children and the elderly (above 65 years old). The SNMHS focused on Saudi respondents in the age range of 65-15; therefore, more tailored research is needed for these sensitive age groups.

More emphasis needs to be given to Saudi women’s mental health and on creating facilities tailored to this major fragment of vulnerable population in the Kingdom.

There is a strong link between mental health and physical health. This indicates the need to conduct research to study the effect of mental illness among patients with certain diseases such as cancer, heart diseases, diabetes and other physical illnesses.

Future studies should consider focusing on specific mental health disorders, risk factors and associated health consequences in the Saudi population. As illustrated earlier in the report, there is an obvious overall scarcity of high-quality mental health research in the KSA.

It is recommended that future mental health research in the Kingdom implements rigorous quality control and state-of-the-art technology, so as to adequately capture and address various research issues, as these tools consequently yield more robust and reliable results.
Mental Health Services Status
Mental Health Services Status in KSA

Ministry of Health Total Budget

4% Towards Mental Health
96% Towards other healthcare sectors

Human Resources

Human Resources in Mental Health facilities and private psychiatric practice (rate per 100,000 population)

Psychiatrists
Nurses
Psychologists
Social workers

Mental Health Services

99 Public Mental Health Clinics
27 Public Mental Health Hospitals
38 Rehabilitation Centers for patients with intellectual and physical disabilities, under the Ministry of Social Affairs
69 Day Care Units for people with mild & moderate intellectual disability having behavioral problems
5 Active Consumer Organizations & NGOs
5 Community-Based Psychiatric Inpatient Units for a total of 0.41 beds per 100,000 population

Community-Based Psychiatric Inpatient Units for a total of 0.41 beds per 100,000 population

Active Consumer Organizations & NGOs

Psychiatrists
Nurses
Psychologists
Social workers

Psychologists
Saudi legislations require employers to hire a certain percentage of employees with disabilities (e.g., mental disability), and give people with mental disorders priority in obtaining state housing and subsidized housing.

Primarily focused on hospital-based epidemiology of mental disorders and health-services research. MOH publishes an annual report that includes mental health data from all regional health directorates.

Timeline of policies and legislations

- National Mental Health Policy
- 2nd Saudi Mental & Social Health Atlas (SAMHA-2)
- Updated Mental Health Policy & Procedure
- 3rd Saudi Mental & Social Health Atlas (SAMHA-3)
- Mental Health Law
KSA Mental Health Resources
KSA Mental Health Resources

The National Center for Mental Health Promotion provides the following services and resources:

Ministry of Health Call Center
Call Center number: 937.

Ajwad
The center provides rehabilitation services to psychiatric patients and the displaced.

Qareebon
Qareebon is a smartphone application that provides mental health e-services and treatments and free psychological consultations.
Available on the Apple store:  
Available on Google play store:

Psychological Consultation center
The center comprises of mental health specialists and counselors that provide confidential and professional consultations by telephone.

For more information please visit the National Committee for Mental Health Promotion Office website: [http://ncmh.org.sa/index.php/home]  
920 03 33 60
Breaking stereotypes
The field staff was often surprised to learn that the people of the Kingdom – are very welcoming, despite being culturally conservative. Some respondents established friendships with the interviewers after their interaction with them during the interviews. Some even exchanged contact information on a personal level, and kept in touch, checking in on each other’s wellbeing. On other occasions, people thought the interviewers were professional doctors and described their health problems and life circumstances to them. When the interviewers tried correcting them, people admitted that they still enjoyed having someone to talk to. This aspect of the project was also able to break stereotypes: – on one hand, even though media instills a fear in people about scams and not inviting strangers into their homes, when people personally learned about this project, they changed their perception about health surveys and their awareness about disorders/illnesses increased. On the other hand, the survey field staff learned that entering into a stranger’s home was not as intimidating as they thought it would be; they learned that respondents were just people, each with their own set of unique problems and emotions. Looking back, interviewers acknowledged that their work was quite rewarding, as they were able to help respondents by merely listening to their concerns.

Feeling Heard
An overwhelming number of participants expressed immense gratitude for this unprecedented nationwide Mental Health Survey, and went out of their way to remove obstacles to their participation, such as time constraints or constraints from other family members. One such case was a woman who was especially motivated to participate in the survey and share the hardships of being a caregiver for two family members suffering with a severe mental illness. Despite these family members’ fears and concerns towards her participation, she courageously and cheerfully managed to get their support. Her tenacious motivation stemmed from her hope and optimism for a better future for those with mental health problems and their families, especially in her home country. At the end of the interview, she expressed her gratitude for the chance to contribute in the survey and have her voice heard. Finally she applauded the interviewers’ efforts, friendliness and kindness.

References