



Interviewer monitoring in the Saudi National Mental Health Survey (SNMHS)

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Overview

- Background & Survey Design
 - World Mental Health Survey Initiative
 - Saudi National Mental Health Survey (SNMHS)
- Monitoring Interviewer Behavior
- Conclusion
 - Discussion, Limitations, and Improvements

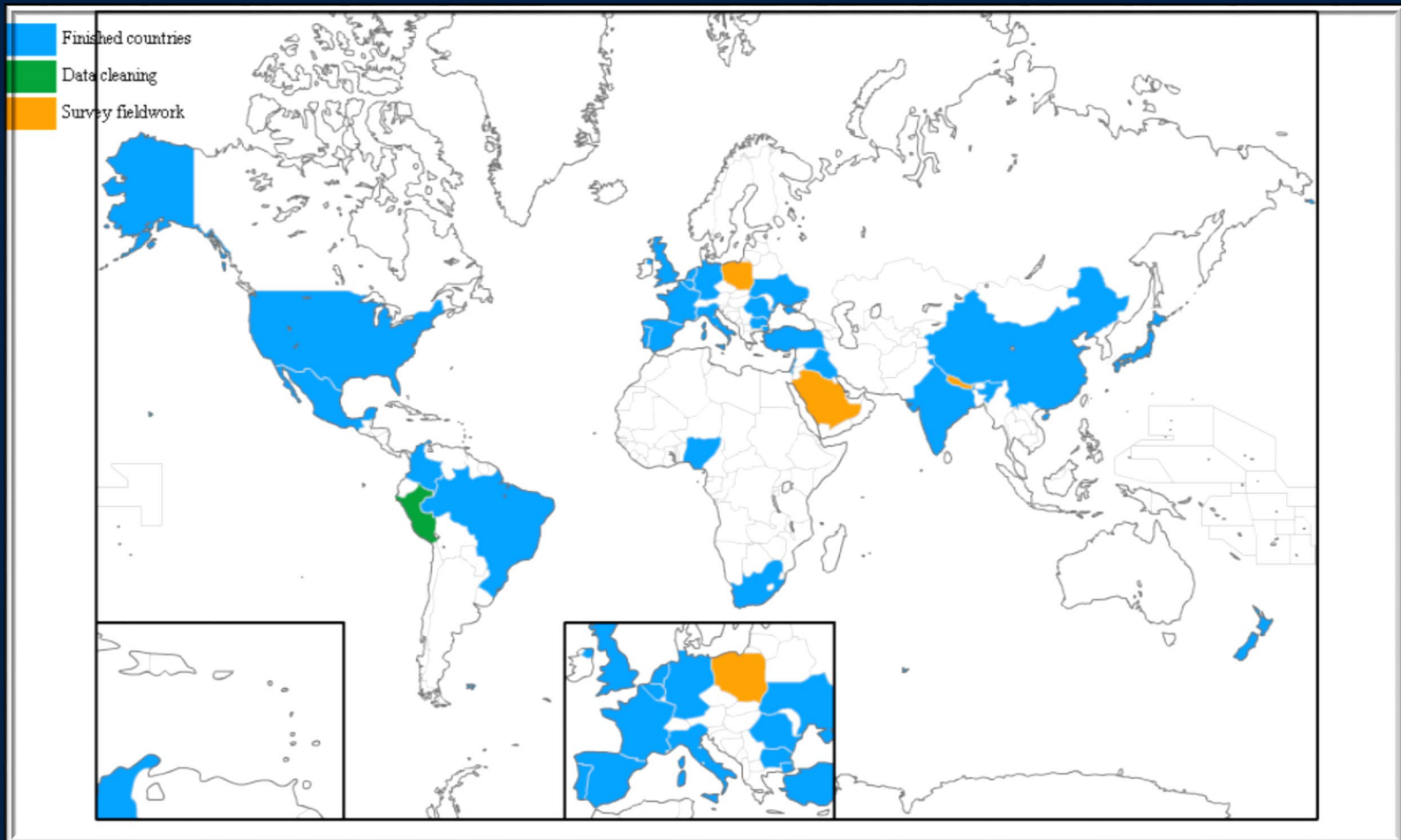


World Mental Health Initiative

- Cross-national study comprised of more than 30 community surveys conducted across the world (<http://www.hcp.med.harvard.edu/wmh/>).
 - Psychiatric epidemiological studies
 - Fully-structured interviewer-administered interviews
- Coordinated through two central team, Data Collection Coordination Centre (Survey Research Operations, University of Michigan), Data Analysis Coordination Center (Harvard University School of Medicine).



Map of Countries (2011)





Saudi National Mental Health Survey

- Began field work in 2013.
- National multistage area probability sample.
 - Random Male and Female Selected from each household.
 - Target 5000 completed interviews.
- Survey Design.
 - Face-to-Face interviewer administered.
 - Composite International Diagnostic Interview (CIDI 3.0).
 - Interview lengths: median = 180 mins.
 - Computerized Administered Personal Interviews (CAPI) using Blaise.
 - Audio-Computerized Administered Self Interview (A-CASI).
 - Gender match interviewers with respondents.
 - Interviews are **NOT recorded**.
 - Saliva collected.



Saudi National Mental Health Survey

(Cont'd)

- Sample Management.
 - University of Michigan in-house sample management system.
 - Interviewers send and receive data daily to/from central server in Ann Arbor, Michigan.
- Interviewers.
 - Extensive recruitment interview including ability to use a laptop.
 - Extended two week training .
 - General interviewing techniques & CIDI 3.0 training.
 - Hardware and software use & Sample management system features.
 - Data collection protocols, including A-CASI administration & saliva collection.
 - Face-to-face certification.
 - Interviewer to team leader ratio 4:1.
 - Not more than 30 interviewers active in the field at any given point of time.



Monitoring Interviewer Behavior

- Factors that could drive interviewers to take shortcuts or falsify data.
 - Harsh climate.
 - Paucity of complex academic face-to-face surveys.
 - Weariness of the Saudi population to strangers visiting their households.
 - Absence of interview recording.
- Quality control procedures.
 - Traditional routine procedures:
 - Verification, by quality control team/verifiers.
 - Field observation, by team leaders.
 - Real-time data-driven assessment, by managers.



Monitoring Interviewer Behavior

(Cont'd)

- Verification.
 - Random selection: 10% of completed interviews and 5% of non-interviews.
 - Within two weeks after interview completed.
 - Telephone (face-to-face if needed).
 - Scripted verification:
 - Whether an interviewer visited the house.
 - Respondent-interviewer interaction.
 - Re-interview a set of survey questions.
 - ACASI administration.
 - Saliva sample request.



Monitoring Interviewer Behavior

(Cont'd)

- Field observations.
 - An initial evaluation per interviewer within her/his first two-week work.
 - Standardized observation check list:
 - Survey protocol.
 - Interviewer's interaction with respondents.
- Additional *targeted* verification or field observation if needed based the *real-time data-driven assessment*.



Data-driven Assessment



Analytical Reporting Process Chart

Raw Data

Key Stroke



Sample Management System



Call Record



Evaluation



Verification



Survey Data



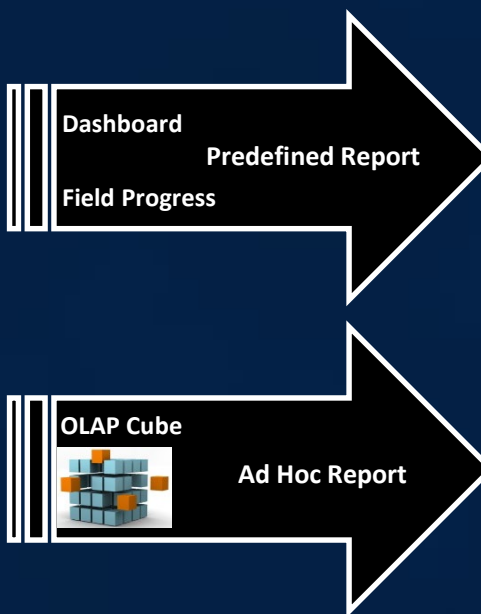
Data Warehouse



- Data Harmonization Across Projects

- Current & Historical Data (Panel Data)
- Filters for different environments

Reporting



Source - Raw Data	Data Warehouse	Analysis/Reporting
<ul style="list-style-type: none"> ➤ Key Stroke ➤ Survey Management System (SMS) ➤ Call records with time stamps and dispositions ➤ QC (Verification & Evaluation) ➤ Survey data 	<ul style="list-style-type: none"> ➤ Point to SQL server ➤ Based on multidimensional database ➤ Data pre-aggregated at regular intervals ➤ Cross-section vs. Panel data ➤ Filter 	<ul style="list-style-type: none"> ➤ Format can be Excel/SAS/PDF/Word/Web-based ➤ Predefined reports – Standard (FPRs) ➤ Predefined report – Customized (Dashboard) ➤ Ad hoc reports (OLAP reports)



QC Indicators by Type & Sources of Errors

Source of Error	Single Occurrence Indicator (cut-off)	Cumulated Indicator (highest or lowest three rates: H vs. L)
Measurement	<ul style="list-style-type: none">Any pause \geq 10 minutesAny question read $<$ 1 secondAn interview length $<$ 30 minutes# of completed interviews \geq 3 on the same dayFailed verification	<ul style="list-style-type: none">(H) Rate of verifications with discrepancy(H) Rate of short path interviews(L) Rate of no mental health disorders(L) Short average interview length(H) Rate of switching from ACASI to CAPI
Coverage	<ul style="list-style-type: none">Short travel time between two interviews on the same dayThree interviews with a household member deleted from the rosterFailed verification	<ul style="list-style-type: none">(H) Rate of cases that are unable to verify(H) Rate of household with no eligible female/male
Nonresponse		<ul style="list-style-type: none">(H) Rate of saliva refusal(L) Lowest average contact attempts per completed interview(L) Low response rate



Quality Control Summary

Interviewer ID	Count of	Count of	Not				Deleted	Number of	Short	Sum of
	Completed	Completed	read	Failed	Short	Long	HH	completed	Time	
	Screener	Main	Questi	Verification	IW	pause	member	IWs/day	between	Flagged
		Interviews	on						IWs	Indicators
1	11	6	0	0	1	1	0	0	0	2
2	6	2	1	1	0	1	0	0	0	3
3	4	13	1	0	1	1	0	0	0	3
4	31	15	1	0	1	1	0	0	1	4
5	29	69	1	0	0	1	0	0	1	3
6	22	29	1	0	1	1	0	1	1	5
7	20	26	1	0	0	1	0	1	0	3
8	38	38	1	0	0	1	0	0	1	3
9	17	16	1	0	1	1	0	0	1	4
10	31	27	1	0	1	1	0	0	0	3
...
Etc..										



Example: Quick Read Drill Down Feature

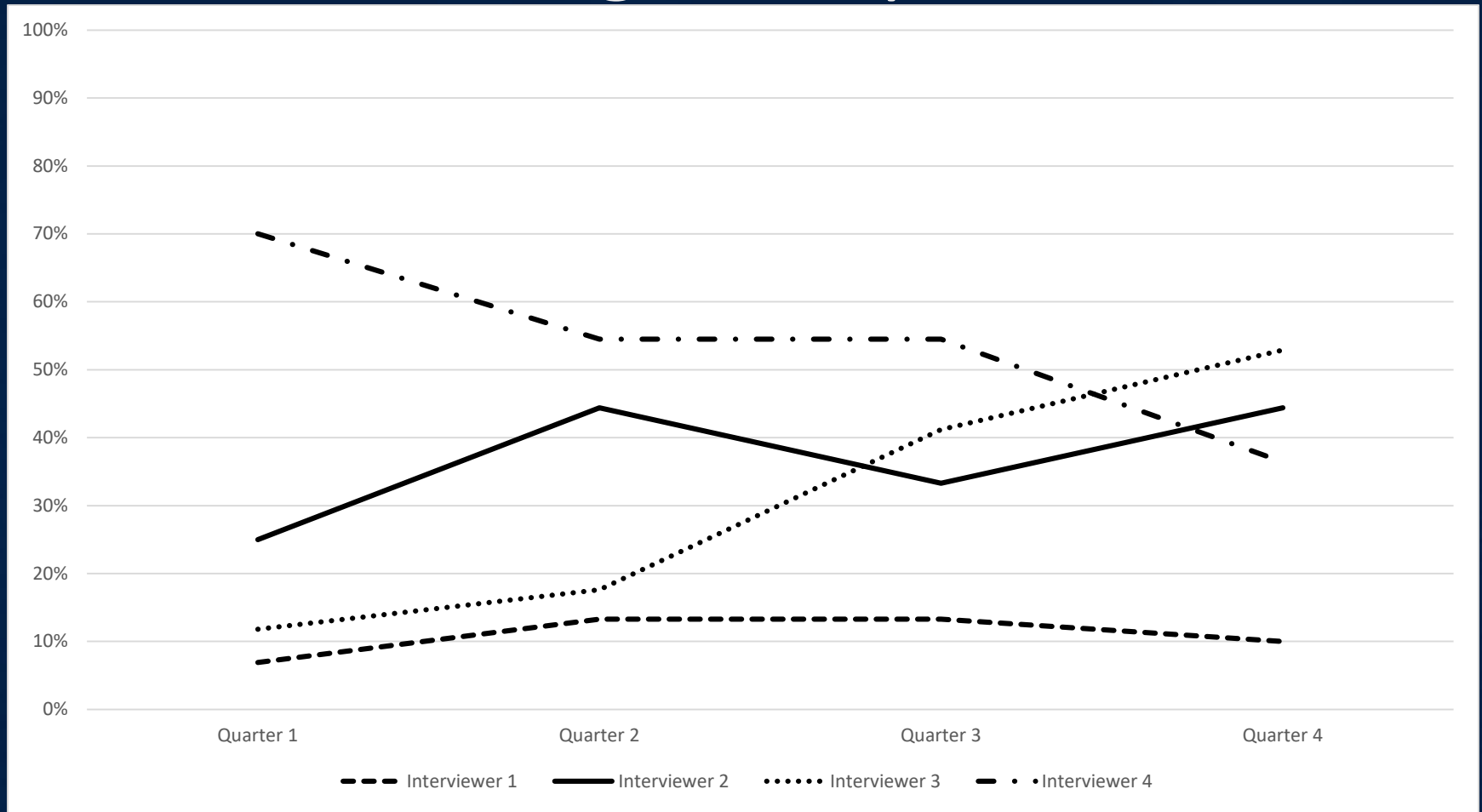
Interviewer ID	Number of Completed Interviews	Number of Interviews Flagged on "Quick Read" indicator
<u>lwer 4</u>	28	12
<u>lwer 6</u>	26	5
<u>lwer 10</u>	38	3
...		
<u>lwer 3</u>	15	2
...	10	1
<u>lwer 7</u>	6	0
Total	218	34

Interviewer ID by Date by Sample ID	Number of Interviews Flagged on "Quick Read" indicator	Maximum Time Spent on Any Field (minutes)
<u>lwer 4</u>	12	62.8078
2015-08-19	0	4.8516
2015-08-22	0	6.6862
...		
2015-08-30	1	5.0965
12556	1	5.0965
54235	0	1.0351
2015-09-03	1	1.7368
...		
Total	218	34

Interviewer ID by Date by Sample ID by Questionnaire Field Name	Maximum Time Spent on Field (minutes)
<u>lwer 4</u>	5.0965
2015-08-30	5.0965
12556 ←	5.0965
INCNTV	0.0120
...	
BLCHRONIC.CC11i	0.0455
...	
BLCONDUCT.CD16f	0.2236
...	
SALVCONS	5.0965

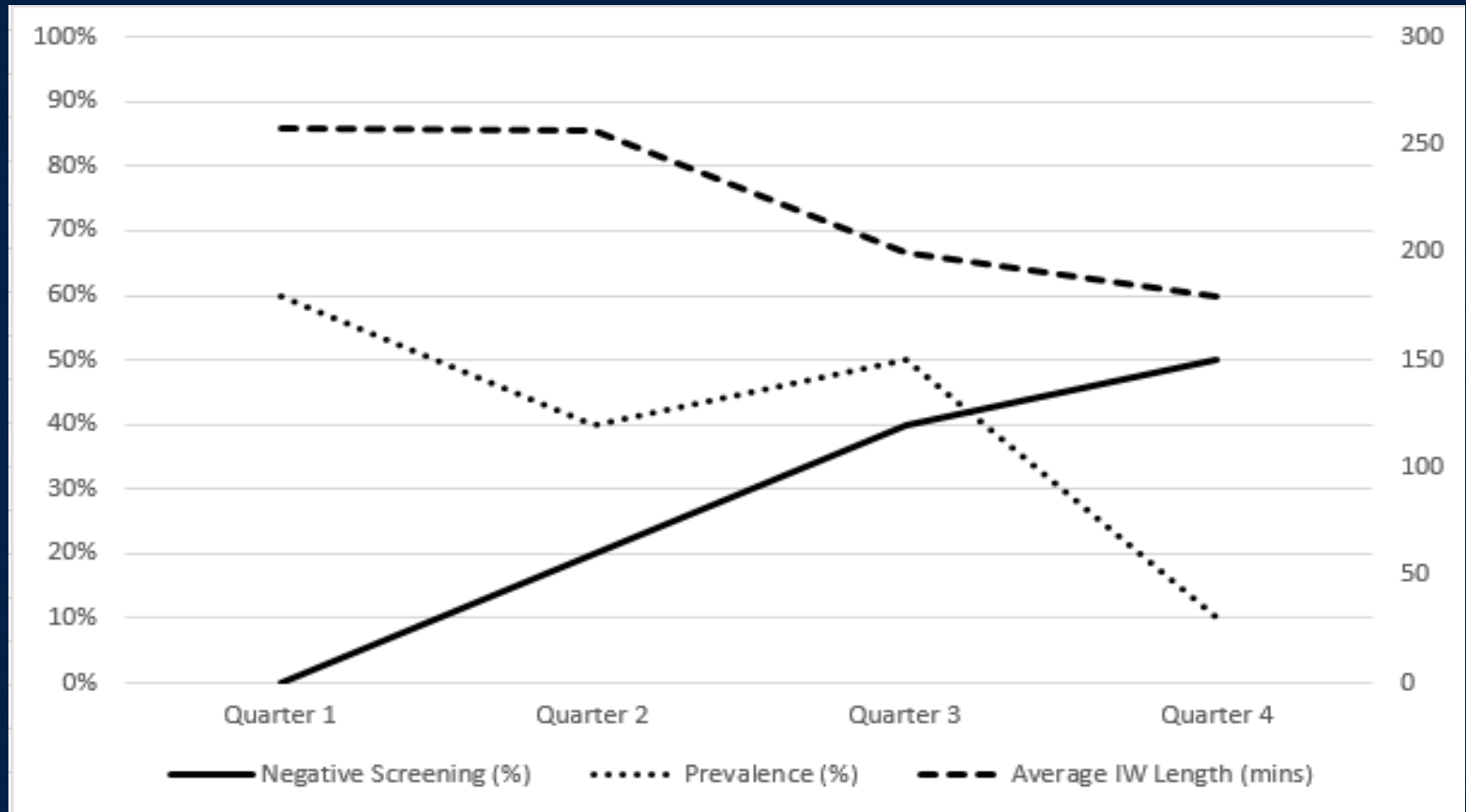


Example: Quarter-level Rates of Endorsing Gate questions





Example: Quarter-level Comparisons on Multiple Indicators





Outcomes

1. Keep monitoring interviewer - No definitive deviation from protocol has been identified.
2. Retrain the interviewer on a specific component of the study.
3. Suspend the interviewer for a period of time until a further investigation on the interviewer's work is conducted.
4. Remove the interviewer from the study permanently.



Discussion

- Require up-front set-up and training for local staff.
- Dynamic process.
 - Define measures > use them > re-define them > modify flagging protocols or programming codes.
- Interpretations of flagged interviewers/cases.
 - Necessary adjustments of flagging protocols .
 - Cross-cultural effect (long pause).
 - Respondent behavior (ACASI).
 - Sample characteristic (single Male HH).
 - Interventions should be implemented after *comprehensive* investigation since:
 - Costly.
 - Require additional human resources.



Discussion

(Cont'd)

- Sample vs. Interviewer effect, when cases are cumulated for the long term monitoring.
- Assessment on 100% of interviews and non-interviews.
- Additional QC target certain cases or interviewers increasing efficiently & reducing cost.
- Deter interviewers from taking short-cuts.
 - Several left the project after being flagged and questioned about their interviews.



Limitations/Improvements

- Too many indicators.
 - Reduce the number of indicators and potentially cluster them.
 - Use more color coding or symbols for usability purposes.
- Interviewer flagging rules not sensitive to workload.
 - Use statistical quality control charts instead of ranking.
- Not all aspects are automated.
 - Link different quality control procedures together and establish a dynamic integrated adjustment to the processes.
- Lack of empirical assessment.
 - Test the association between quality indicators and survey error.
 - Test the effectiveness of the interventions tied to these quality indicators.



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References

- Composite International Diagnostic Interview (CIDI 3.0) (Kessler and Üstün, 2004):
<http://www.hcp.med.harvard.edu/wmhcid/>
- The World Mental Health Survey Initiative:
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- The Saudi National Mental Health Survey:
<http://www.kscdr.org.sa/en/research/projects/Pages/TheSaudiNationalMentalHealthSurvey.aspx>