

Content Analysis and Predicting Survey Refusal: What Are Respondents' Concerns about Participating in a Face-to-face Household Mental Health Survey?

Sanaa Hyder^{1,2,3}, Lisa Bilal^{1,2,3}, Zeina Mneimneh⁴,
Mohammad Talal Naseem^{1,2,3}, Edward DeVol²,
Maggie Aradati^{1,2,3}, Mona Shahab^{1,5,6,7},
Abdulrahman BinMuammar^{1,2,3}, Abdullah Al-Subaie^{3,8},
AbdulHameed Al-Habeeb⁹, and Yasmin Altwajiri^{1,2,3}

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¹ King Salman Center for Disability Research, Riyadh, Saudi Arabia

² Biostatistics, Epidemiology and Scientific Computing Department, King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia

³ SABIC Psychological Health Research & Applications Chair (SPHRAC), College of Medicine, King Saud University, Riyadh, Saudi Arabia

⁴ Survey Research Center, Institute for Social Research, University of Michigan, Ann Arbor, MI, USA

⁵ Clinical Epidemiology, Leiden University Medical Center, Leiden, the Netherlands

⁶ Faculty of Social and Behavioural Sciences, Clinical Psychology Department, Leiden University, the Netherlands

⁷ i-psy interculturele psychiatrie, Parnassia Groep, The Netherlands

⁸ Edrak Medical Center, Riyadh, Saudi Arabia

⁹ Mental Health and Social Services, Ministry of Health, Riyadh, Saudi Arabia

Corresponding Author:

Yasmin Altwajiri, Biostatistics, Epidemiology and Scientific Computing Department, MBC 03, King Faisal Specialist Hospital and Research Centre, PO Box 3354, Riyadh 11211, Saudi Arabia.
Email: yasmint@kfshrc.edu.sa

Abstract

Previous studies suggest that refusals form the largest proportion of nonresponse for household surveys. As face-to-face household health surveys are uncommon in several countries, it might be advantageous for prospective surveys to preemptively tackle respondents' refusal to survey participation. Using contact history data from the Saudi National Mental Health Survey, we examined the relationship between social environmental factors, respondent characteristics, survey request concerns recorded by interviewers, and respondents' propensity to refuse to participate in the survey. Content analysis and logistic regressions were conducted. Our findings suggest that urbanicity, region, socioeconomic status, age, and gender are associated with refusal. Patriarchal gatekeepers and specific survey-related concerns are more likely to lead to temporary refusals compared to final refusals. These results have implications for survey researchers employing similar recruitment and data collection methods, for example in tailoring refusal conversion strategies for interviewers to address concerns expressed by Saudi and/or culturally similar respondents.

Introduction

Brick and Williams (2013) indicate that refusals form the largest component of nonresponse for face-to-face household surveys, while noncontacts and other reasons account for less than half of the total nonresponse. Although previous research has examined overall nonresponse for face-to-face health and mental health surveys (Boshuizen et al. 2006; de Graaf et al. 2013; de Winter et al. 2005), few studies have considered nonresponse in terms of refusal specifically (e.g., Bates et al. 2008). As face-to-face epidemiological surveys in the Middle East are uncommon (e.g., Karam et al. 2006), it is additionally crucial for prospective surveys to determine what contributes to survey refusal to address it preemptively. In the Kingdom of Saudi Arabia (KSA), while market and health research studies are occasionally conducted, these are mainly done as paper, phone, or online surveys (e.g., AlGhamdi et al. 2012; Brown 2001). Thus, given the rare implementation of household surveys in the KSA and the role played by survey climate (i.e., the number of surveys conducted in a society and their perceived legitimacy; Loosveldt and Joye 2016), this article focuses on respondents' refusal to participate in a face-to-face household health interview (i.e., the Saudi National Mental Health Survey [SNMHS]).

Studies suggest that reasons for survey refusal are serious concerns for respondents and not just general excuses to not participate in a survey (Menold and Zuell 2010; Schnauber and Daschman 2008). According to leverage-salience theory (Groves et al. 2000), every individual places different importance/salience on the features of a survey request (e.g., survey topic, survey duration, sponsor). While some individuals positively value a survey attribute, others place a negative value on the same attribute (termed leverage of the request). Individual differences, the salience, and value placed on survey attributes by the individuals determine whether they refuse or accept to participate in a survey. For instance, interview duration and sensitive questions (eliciting sensitive details about one's life and health) contribute to respondent burden and the decision to participate in a face-to-face interview (Peretti-Watel et al. 2005; Wenemark et al. 2010). Additionally, respondents are not autonomous information processors, as they exist within complex social matrices, which influence their thoughts, feelings, and behaviors, and subsequently their survey response (Johnson et al. 2002). Environmental factors like region, dwelling structure, and degree of urbanicity (Bates et al. 2008; Bethlehem 2009), and respondent characteristics such as age, gender, and education have also been shown to predict survey refusal (Bethlehem 2009; Kjølner and Thoning 2005). However again, these studies discuss survey nonresponse generally and not refusal in a health survey conducted in a collectivistic society like that of KSA.

Investigating factors surrounding a Saudi household survey therefore are valuable as these findings can inform nonresponse propensity models, tailor contact protocols, or influence interviewers' behavior to concerns expressed by respondents for efficiency gains related to survey participation (Bates et al. 2008; Groves and Couper 1998)—particularly for prospective surveys using similar methods aimed at culturally comparable respondents (e.g., conservative, or those in other Arabian Gulf countries). In this article, we use SNMHS data about interviewer-household interactions to explore survey request concerns and predictors associated with refusal propensity to survey participation. Given the differences in interview duration and related respondent burden, we compare data on refusal for the household listing interview (henceforth, referred to as screener; described later) and the main interview completed with the respondent selected from the screener. Thus, the research questions are as follows: (1) What are respondents' survey request concerns related to refusal propensity for screeners and main interviews? (2) Are survey request concerns significantly associated with refusal propensity for screeners and main interviews? (3) Are social environmental

factors and respondent characteristics significantly associated with refusal propensity for screeners and main interviews?

Methods

Saudi National Mental Health Survey

The SNMHS is part of the World Mental Health Survey Consortium, a mental health collaborative between Harvard University and the University of Michigan, Ann Arbor, with participation from over 33 countries. It is a national epidemiological survey, which aims to measure the burden of mental health problems and its comorbidities among the Saudi population.

Sampling, Survey Instrument and Fieldwork

Using a multistage probability proportionate to size sample design based on the 2010 estimated population by the General Authority for Statistics (Riyadh), a total of 4,004 Saudi respondents—male and female between ages 15 and 65—formed the survey sample. Contact history data pertaining to respondent recruitment and refusal were collected using SurveyTrak (ST), a proprietary sample management system developed and tailored by the Survey Research Center, University of Michigan. The estimated non-response rates due to refusals for screeners and main interviews were 20% and 60% respectively. For the characteristics of study sample, see Online Supplement.

The Saudi adaptation of the computerized Composite International Diagnostic Interview 3.0 (CIDI; Shahab et al. 2019) was used to administer face-to-face main interviews. Prior to fieldwork, interviewers underwent two-week long training sessions for CIDI 3.0. Training also covered general interviewing techniques, sample management, locating households, and respondent cooperation. Refresher interviewer training sessions were conducted during fieldwork interims to reemphasize protocols for addressing respondent survey request concerns. See Online Supplement for a training refusal scenario.

Interviewers made a maximum of 10 contact attempts with a household to complete a screener, which comprised of obtaining demographics of all the household members. On approaching a household, the interviewer introduced the survey as a “Health and Stress” national study, given that the CIDI 3.0 includes general health and stress components alongside mental health sections. If a household (member) did not agree to participate, the interviewer attempted to persuade them, and a refusal letter was sent to

them reinstating facts like they were randomly chosen, their answers would be kept confidential, and their participation would affect the representativeness of findings. Main interview respondents who consented to participate received monetary incentives (worth 100 Saudi Riyals) as compensation. On average, a screener took about 11 minutes to complete, and a main interview was approximately two hours long. Details of survey procedures can be found elsewhere (Aradati et al. 2019; Hyder et al. 2017; Shahab et al. 2017). The SNMHS methods were approved by the Institutional Review Board committee at the King Faisal Specialist Hospital & Research Centre, Riyadh.

Contact-level Notes

The ST system comprised of multiple dimensions including one for contact level. At this level, interviewers typed “call notes” onto a designated digital interface; these were open-ended observations about their interactions with household informants (members that provide screener information) and respondents (members selected for main interview). Interviewers used call notes to explain contact(s) made with a respondent, including if applicable, survey request concerns related to refusal propensity. Contact attempts described in call notes were usually based on face-to-face interactions but were sometimes also based on contact with respondent via telephone or mobile (e.g., text messages). As call notes provided richer information compared to ST closed-ended forms, we extracted these from the ST database for finalized cases with an outcome of interim refusal, final refusal, and complete interview (operationalized later). For refusal cases, we reviewed all the call notes entered for a case and selected the most specific concern for analysis. The Online Supplement outlines coding examples of call notes.

Analyses

A mixed-methods approach using qualitative and quantitative analyses was used to answer the research questions.

Refusal Propensity

Refusal propensity was operationalized as: (1) those who initially refused but were eventually interviewed, termed interim refusal; (2) those who refused but were never interviewed, termed final refusal; and (3) those who were interviewed and never refused, termed complete interview.

Social Environmental and Respondent Characteristics

These variables included urbanicity (rural/urban), region (Central/Eastern/Northern/Southern/Western region of KSA), whether or not the dwelling was located in a multiunit structure (e.g., apartment building) or single-unit (e.g., villa), and socioeconomic status (SES categorized as high, medium, or low). Multiunit structure and SES data were completed by interviewers as part of their (subjective) observations on ST.

For households with final refusals for screeners, no individual-level information was available. However, for main interview and screener respectively, respondent and informant demographics were available from completed household screening data. These included gender (male/female) and age (categorized as 15–18 years, 19–34 years, 35–49 years, and 50–65 years).

Survey Request Concerns

Survey request concerns were coded based on call notes for refusal cases. Content analysis (Crowe et al. 2015) was used to generate concern categories. Microsoft Excel 2010 (Microsoft Cooperation, Washington) and QDA Miner Lite (Provalis Research, Montreal) were used to manage textual contact-level data and to facilitate the finding of meaning units. Selected call notes were translated from Arabic to English by the research team. Two coders worked on the categorization of data individually and reviewed the codes together, finalizing categories as necessary based on consensus. A third coder validated the generated sub-categories and grouped them under main categories in agreement with the primary coder.

Statistical Tests

All quantitative analyses were unweighted and performed using PROC LOGISTIC in SAS Enterprise Guide 7.1 (SAS Institute Inc., NC). Logistic regressions were performed (with significance level of $P < 0.05$) to explore the effect of survey request concerns, social environmental, and respondent characteristics on refusal propensity. Dummy variables were created for all variables with two or more categories. For the main interview-level, interactions between gender variables (i.e., informant gender and respondent gender) were added to the regression model as it was hypothesized that given the conservative Saudi culture, cases with gender-matched variables (i.e. female informants \times female respondents) would less likely be interim and final refusals.

Results

Survey Request Concerns

In total, call notes from 36 interim refusals and 227 final refusals for screeners, and 69 interim refusals and 869 final refusals for main interviews were coded. The following categories reflected all the concerns related to refusal propensity.

General refusal. This category comprised of statements that expressed general refusal to do the interview such as when the respondent was not interested/did not want to be bothered, was not allowed to do the interview because a family member refused (i.e., usually a female member), avoided contact or broke the appointment, was too busy, traveling, had family issues or had no concerns. Call note example: “She’s not interested and asked us kindly not to return again because we’re bothering them.”

Negative feelings toward interviews. Statements suggesting that the respondent was hostile and threatened the interviewer, hung up/slammed the door on the interviewer, said that they did not do surveys, or gave information last time, or indicated that the survey had no benefit were categorized as negative feelings toward interviews. Call note example: “Threatened to send someone to make us leave.”

Patriarchal gatekeepers. When male household members—usually the household head (i.e. a patriarch)—were not present or when they refused participation on behalf of the respondent, the concern was categorized under patriarchal gatekeepers. Call note example: “Her husband refuses to allow her to participate; she really wanted to participate herself.”

Specific survey-related concerns. This category comprised of statements where the respondent expressed confidentiality or privacy concerns, indicated that the survey content did not apply to them (e.g., “I’m healthy”), had legitimacy concerns, or anti-government concerns, said that the interview took too much time, had difficulty understanding questions, or refused because participation is voluntary. Call note example: “Did not like questions about her life and her family.”

Health. Statements in which the respondent indicated varied health concerns or where female respondents refused due to pregnancy-related difficulties

Table 1. Concerns Frequencies and Logistic Regression Estimates Predicting Refusal Propensity by Concerns for Screeners ($N = 263$) and Main Interviews ($N = 938$).

Concerns	Interim Refusal	Final Refusal	Interim Refusal vs. Final Refusal	
	%(n)	%(n)	Coefficient	SE
Screeners				
General refusal [†]	31 (11)	44 (101)	—	—
Negative feelings toward interviewers	25 (9)	32 (72)	0.138	0.475
Patriarchal gatekeepers	22 (8)	10 (23)	1.161*	0.519
Specific survey related	22 (8)	14 (31)	0.863	0.508
Main interviews				
General refusal [†]	46 (32)	66 (571)	—	—
Negative feelings toward interviewers	6 (4)	10.5 (92)	-0.254	0.542
Patriarchal gatekeepers	22 (15)	11 (95)	1.036**	0.332
Specific survey related	23 (16)	9.5 (83)	1.235**	0.328
Health	3 (2)	3 (28)	0.243	0.754

Note: SE Standard Error; [†]reference category; * $p < 0.05$; ** $p < 0.01$.

(preventing them to do the interview) were categorized under health concerns. Call note example: “He said his feet really hurt and if he manages to heal them then he would participate.”

For examples of listed subcategories, see Online Supplement. All primary concerns except health occurred for both screeners and main interviews. Health concerns were raised only for main interviews. Most subcategories were applicable for screeners and main interviews. The following were not mentioned for screeners: “other family member refuses” and “traveling” (within general refusal concerns); and “interview takes too much time,” “difficulty understanding questions,” and “survey is voluntary” (within specific survey-related concerns). The subcategory “gave that information last time” occurred only for screeners.

General refusal concerns were most commonly reported for both screeners and main interviews (Table 1). For screeners, patriarchal gatekeeper concerns were significantly more likely than general refusal concerns to lead to interim refusal (compared to final refusal; coefficient = 1.161). For main interviews, patriarchal gatekeeper concerns and specific survey-related concerns were significantly more likely than general refusal

Table 2. Multinomial Logistic Regression Estimates Predicting Refusal Propensity by Social Environmental Characteristics for Screeners (N = 2,659).

Social Environmental Characteristics	Interim Refusal vs. Complete Interview		Final Refusal vs. Complete Interview	
	Coefficient	SE	Coefficient	SE
Rural	-0.509	0.635	-0.583*	0.2816
Urban [†]	—	—	—	—
Region				
Central [†]	—	—	—	—
Eastern	-0.284	0.638	-0.155	0.265
Northern	-0.039	0.508	-0.767**	0.294
Southern	-0.147	0.615	-0.621	0.334
Western	-0.548	0.588	0.287	0.202
Dwelling structure ^a				
Single unit	-0.193	0.387	0.152	0.168
Multi-unit [†]	—	—	—	—
SES ^b				
Low [†]	—	—	—	—
Middle	0.532	0.634	0.198	0.231
High	1.231	0.690	0.803**	0.261

Note: SE Standard Error; [†]reference category; *p < 0.05; **p < 0.01; missing frequencies for ^adwelling structure: 40, ^bSES: 38

concerns to lead to interim refusal (compared to final refusal; coefficient = 1.036 and 1.235 respectively).

Refusal Propensity Predictors

Urbanicity, region, and SES were significantly associated with final refusal (Table 2). Households in rural areas (vs. urban areas), and northern region (vs. central region) were less likely to report final refusal (coefficient = -0.583 and -0.767 respectively). However, households from a high socio-economic neighborhood (vs. those in low SES) were more likely to refuse a screener (coefficient = 0.803). None of the social environmental characteristics significantly predicted interim refusal for screeners.

Respondent gender was significantly related to interim refusal (Table 3). Female respondents were more likely than male respondents to temporarily refuse before being persuaded to complete an interview (coefficient =

Table 3. Estimates from Multinomial Logistic Regression Predicting Refusal Propensity by Sociodemographic Characteristics for Main Interviews ($N = 4,849$).

Sociodemographic Characteristics	Interim Refusal vs. Complete Interview		Final Refusal vs. Complete Interview	
	Coefficient	SE	Coefficient	SE
Rural	0.074	0.373	-0.119	0.121
Urban [†]	—	—	—	—
Region				
Central [†]	—	—	—	—
Eastern	-0.500	0.427	-0.858**	0.142
Northern	-0.502	0.439	-0.498**	0.129
Southern	-0.389	0.495	-0.298*	0.141
Western	-0.297	0.344	-0.797**	0.114
Dwelling structure ^a				
Single unit	0.486	0.281	0.052	0.089
Multi-unit [†]	—	—	—	—
SES ^b				
Low [†]	—	—	—	—
Middle	0.555	0.389	0.089	0.115
High	0.709	0.449	0.368**	0.137
Respondent gender				
Female	0.718*	0.324	0.474**	0.096
Male [†]	—	—	—	—
Respondent age				
Age 15–18	-0.405	0.529	-0.423*	0.169
Age 19–34	-0.017	0.387	0.080	0.127
Age 35–49	0.287	0.411	0.206	0.135
Age 50–65 [†]	—	—	—	—
Informant gender ^c				
Female	0.034	0.489	0.535**	0.117
Male [†]	—	—	—	—
Informant age ^d				
Age 16–18 [‡]	0.347	0.494	0.118	0.189
Age 19–34	-0.187	0.346	0.016	0.113
Age 35–49	-0.370	0.361	0.096	0.115
Age 50–65 [†]	—	—	—	—
Female respondent × Female informant	-0.007	0.572	-1.307**	0.166

Note: SE Standard Error; [†]reference category; [‡]for screeners, informants were required to be at least 16 years old, with no cut-off for age limit; missing frequencies for ^adwelling structure: 23, ^bSES: 21, ^cInformant gender: 2, ^dInformant age: 2; * $p < 0.05$; ** $p < 0.01$.

0.718). The interaction between respondent gender and informant gender was not a significant interim refusal predictor.

Region, SES, respondent age and gender, and informant gender were significantly related to final refusal. Respondents in other regions as compared to central region were less likely to report final refusal (coefficient = -0.858 , -0.498 , -0.298 , and -0.797 respectively). Households from a high socioeconomic neighborhood (vs. low SES) were significantly more likely to refuse main interviews (coefficient = 0.368). However, younger respondents (age 15–18 vs. age 50–65) were less likely to refuse main interviews (coefficient = -0.423). Finally, female respondents (compared to males) and respondents from households with female informants (vs. males) were more likely to refuse main interviews (coefficient = 0.474 and 0.535 respectively); this effect was reduced when both the informant and respondent were female, leading to complete interviews (interaction coefficient = -1.307).

Discussion

The present study employed qualitative and quantitative analyses to examine survey request concerns related to refusal propensity for household interviews conducted for the Saudi National Mental Health Survey. Content analysis yielded five primary concerns as reported by household members/respondents for refusing to participate: general concerns, negative feelings toward interviews, specific survey-related concerns, patriarchal gatekeepers, and health concerns. These concern categories were consistent with examples recorded in previous literature (Bates et al. 2008; Menold and Zuell 2010) and the leverage-salience theory proposed by Groves et al. (2000). They were also in line with the different levels posited by De Leeuw and De Heer (2002), suggesting that nonresponse (including refusal) was contingent on variables at the macro level (e.g., society, culture), mezzo level (e.g., survey design), and micro level (e.g., respondent, interviewer).

We also explored whether concerns reported by household informants and respondents differed between interim refusals and final refusals. Compared to general refusal, patriarchal gatekeeper concerns were significantly associated with interim refusals that eventually led to completed interviews. Given the overarching role Saudi males play in their culture, it may be that upon initial attempt, patriarchal gatekeeper concerns might prevent a household from participating in an interview. In KSA, women usually need permission from the responsible male of the household to seek work,

education, or travel (Mobaraki and Söderfeldt 2010; although permission for travel may be irrelevant now [see *Arab News* 2019]), and by the same patriarchal logic, the permission for survey participation may be inferred. Regardless, this finding suggests that initial patriarchal gatekeeper concerns might be addressed by the interviewer, leading to a complete interview rather than a final refusal; this could inform prospective interviewer trainings.

Compared to general concerns, it also seems that interviewers were able to avoid final refusals when specific survey-related concerns were addressed. Given the training protocol, it is much easier for interviewers to identify specific concerns expressed by household members, tailor their behavior accordingly, and engage members in a positive manner to avoid final refusal—an approach that is consistent with literature (Groves et al. 2009).

Conversely, concerns related to negative feelings and health (compared to general concerns) did not statistically differentiate interim from final refusals. This is understandable as, for example, a household that aggressively closes the door before the interviewer explains the study does not allow the interviewer the chance to address any concerns. In contrast, health-related issues, such as a respondent being sick, are non-modifiable, especially if the fieldwork period ends before the respondent regains health.

With regard to social environmental characteristics, urbanicity was significantly related to final refusal for screeners. Rural households were less likely to have final refusals (vs. complete interviews) than those in urban areas—an urbanity effect consistent with earlier literature (Groves and Couper 1998; Kjølner and Thoning 2005). Callens and Croux (2004) indicate that urban life is associated with social disorganization, weakened local kinship and friendship networks, and reduced participation in local affairs, which could extend to surveys.

Similarly, northern region households as compared to central region for screeners, and households from other regions (vs. central region) for main interviews were less likely to have final refusals (vs. complete interviews). As KSA's central region is relatively modernized and industrialized (resulting in more individualism; Allik and Realo 2004), respondents from this region may have busier lifestyles. They might be more predisposed to valuing individualistic self-autonomy over collectivistic societal benefit, and consequently more likely to refuse survey participation.

We also found that households located in high socioeconomic neighborhoods (vs. low socioeconomic neighborhoods) were more likely to end with final refusals for both screeners and main interviews, consistent with

Groves and Couper's (1998) findings. Perhaps households belonging to low socioeconomic neighborhoods are more attracted to the survey incentives; alternatively, they are more generous, trusting, helpful, and generally more committed to egalitarian values than their high SES counterparts (Piff et al. 2010).

Moreover, young respondents (age 15–18) were less likely to have final refusal compared to older respondents, consistent with other studies (Callens and Croux 2004; Kjølner and Thoning 2005). This could be because young respondents have time to spare, less responsibilities, and family obligations to attend to, allowing them to participate in a survey.

Finally, female respondents were more likely to exhibit interim refusal and final refusal compared to male respondents. This effect, however, was reduced for main interviews when the informant was also a female. This falls in line with the patriarchal mechanism (Mobaraki and Söderfeld 2010) described earlier. Moreover, a household where a female informant completed a screener, after which a female respondent was selected for the main interview, might reflect a different household dynamic such as greater female autonomy or lower level of conservatism, leading to a reduced effect of respondent gender on refusal propensity as compared to other households.

In summary, we found several characteristics associated with refusal, which were non-modifiable such as urbanicity, region, SES, age, and gender. Regarding concerns, mainly patriarchal gatekeeper and specific survey-related concerns were significantly related to interim refusals compared to final refusals—consistent with literature that some types of refusals are highly dependent on situational factors (Menold and Zuell 2010). Some respondents who refuse at one point often accept participation when recontacted (e.g., Schnauber and Daschmann 2008), which in our study could refer to those who initially refused. These findings have important cultural implications for survey researchers. For instance, prospective surveys in KSA and other countries with culturally similar respondents might consider tailoring interactions with potential respondents and conduct interviewer trainings to address unique cultural concerns (Massey and Tourangeau 2013).

Further research investigating more nuanced reasons for survey refusal through focus groups with male members of Saudi households is needed. Following the interaction effect finding, a gender prespecified sampling method (e.g., Trung Le et al. 2014) might be useful wherein if the respondent's gender is known, the informant's gender may be assigned accordingly, potentially addressing refusal at the main interview level, but not at

the screener level. Still, this type of culturally sanctioned gender pre-specification might not guarantee complete interviews as this method has not been experimented with. Within KSA, surveys might also consider allocating resources toward marketing and creating awareness about community mental health surveys, consequently improving the country's survey climate. Given the SNMHS' respondent recruitment methods, our results might also benefit studies considering similar methods and investigating sensitive issues (e.g., HIV; Peretti-Watel et al. 2005). Altogether, these would, in turn, improve response rates and combat the declining trend that potentially jeopardizes the quality of survey data collected.

The following limitations need to be considered in light of our findings. First, the coded concerns were based on interviewers' observations. There is some evidence to suggest that interviewer observations are affected by measurement error. Although Campanelli et al. (1997) found less than 50% agreement rate between interviewer contact observations and validations from doorstep recordings, such observations may be error prone, specifically when interviewers make inferences based on limited information (West and Kreuter 2013). Yet, few attempts have been made to improve interviewer observations (e.g., West 2010), and there is still a lack of comprehensive guidance to improve data from interviewer observations.

Second, we collected survey request concerns using an open-answer format. Although previous studies used similar measures (e.g., Menold and Zuell 2010), some interviewers might overuse the open answer format to write comments that are incompatible with the built-in (concern) categories provided as multiple-choice options (Bates et al. 2008). Again, there is not enough literature to suggest that already coded (close-ended, multiple choice format) data are better than open-ended coded data. Finally, the present study had limited interim refusal cases, which may have affected the power to find more relevant associations.

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Supplemental Material

Supplemental material for this article is available online.

References

- AlGhamdi, R., S. Drew, and T. Alhussain. 2012. A conceptual framework for the promotion of trusted online retailing environment in Saudi Arabia. *International Journal of Business and Management* 7:140–149.
- Allik, J., and A. Realo. 2004. Individualism–collectivism and social capital. *Journal of Cross-Cultural Psychology* 35:29–49.
- Arab News*. 2019. Saudi Arabia ends restrictions on women traveling: Royal Decree. *Arab News*. <https://www.arabnews.com/node/1534241/saudi-arabia> (accessed September 8, 2019).
- Aradati, M., L. Bilal, M. T. Naseem, S. Hyder, A. Al-Habeeb, A. Al-Subaie, M. Shahab, B. Sohail, M. Baig, A. Binmuammar, and Y. Altwaijri. 2019. Using knowledge management tools in the Saudi National Mental Health Survey helpdesk: Pre- and post- study. *International Journal of Mental Health Systems* 13:33.
- Bates, N., J. Dahlhamer, and E. Singer. 2008. Privacy concerns, too busy, or just not interested: Using doorstep concerns to predict survey nonresponse. *Journal of Official Statistics* 24:591.
- Bethlehem, J. 2009. The nonresponse problem. In *Applied survey methods: A statistical perspective*, ed. J. Bethlehem, 209–48. Hoboken, NJ: John Wiley & Sons.

- Boshuizen, H., A. Viet, H. Picavet, A. Botterweck, and A. Van Loon. 2006. Non-response in a survey of cardiovascular risk factors in the Dutch population: Determinants and resulting biases. *Public Health* 120:297–308.
- Brick, J. M., and D. Williams. 2013. Explaining rising nonresponse rates in cross-sectional surveys. *The Annals of the American Academy of Political and Social Science* 645:36–59.
- Brown, C. A. 2001. A comparison of the outcomes of two clinical audits of burn pressure garment satisfaction and compliance in Saudi Arabia. *Burns* 27:342–48.
- Callens, M., and C. Croux. 2004. Contact and cooperation in the Belgian fertility and family survey. *Survey Methodology* 30:115–24.
- Campanelli, P., P. Sturgis, and S. Purdon. 1997. *Can you hear me knocking: An investigation into the impact of interviewers on survey response rates*. London: Social and Community Planning Research.
- Crowe, M., M. Inder, and R. Porter. 2015. Conducting qualitative research in mental health: Thematic and content analyses. *Australian & New Zealand Journal of Psychiatry* 49:616–23.
- de Graaf, R., S. van Dorsselaer, M. Tuithof, and M. ten Have. 2013. Sociodemographic and psychiatric predictors of attrition in a prospective psychiatric epidemiological study among the general population. Result of the Netherlands Mental Health Survey and Incidence Study-2. *Comprehensive Psychiatry* 54: 1131–39.
- De Leeuw, E., and W. De Heer. 2002. Trends in household survey nonresponse: A longitudinal and international comparison. In *Survey nonresponse*, eds. R. M. Groves, D. A. Dillman, J. L. Eltinge, and R. J. Little, 41–54. New York: John Wiley & Sons.
- de Winter, A., A. Oldehinkel, R. Veenstra, J. Brunnekreef, F. Verhulst, and J. Ormel. 2005. Evaluation of non-response bias in mental health determinants and outcomes in a large sample of pre-adolescents. *European Journal of Epidemiology* 20:173–81.
- Groves, R. M., and M. P. Couper. 1998. *Nonresponse in household interview surveys*. New York: Wiley.
- Groves, R. M., F. J. Fowler, Jr., M. P. Couper, J. Lepkowski, E. Singer, and R. Tourangeau. 2009. *Survey Methodology*, 2nd ed. Hoboken, NJ: John Wiley & Sons.
- Groves, R. M., E. Singer, and A. Corning. 2000. Leverage-saliency theory of survey participation: Description and an illustration. *Public Opinion Quarterly* 64: 299–308.
- Hyder, S., L. Bilal, L. Akkad, Y. Lin, A. Al-Habeeb, A. Al-Subaie, M. Shahab, A. Binmuammar, F. Al-Tuwaijr, N. Kattan, and Y. Altwaijri. 2017. Evidence-based guideline implementation of quality assurance and quality control procedures in

- the Saudi National Mental Health Survey. *International Journal of Mental Health Systems* 11:60.
- Johnson, T. P., D. O'Rourke, J. Burris, and L. Owens. 2002. Culture and survey nonresponse. In *Survey nonresponse*, eds. R. M. Groves, D. A. Dillman, J. L. Eltinge, and R. J. Little, 55–69. New York: John Wiley & Sons.
- Karam, E. G., Z. Mneimneh, A. Karam, J. Fayyad, S. Nasser, S. Chatterji, and R. Kessler. 2006. Prevalence and treatment of mental disorders in Lebanon: A national epidemiological survey. *The Lancet* 367:1000–06.
- Kjøller, M., and H. Thoning. 2005. Characteristics of non-response in the Danish Health Interview Surveys, 1987–1994. *The European Journal of Public Health* 15:528–35.
- Loosveldt, G., and D. Joye. 2016. Defining and assessing survey climate. In *The Sage handbook of survey methodology*, eds. C. Wolf, D. Joye, W. Smith, and Y. Fu, 67–77. London: Sage.
- Massey, D. S., and R. Tourangeau. 2013. Where do we go from here? Nonresponse and social measurement. *The Annals of the American Academy of Political and Social Science* 645:222–36.
- Menold, N., and C. Zuell. 2010. Reasons for refusals, their collection in surveys and interviewer impact. *GESIS-Working Papers 2010/11*. GESIS, Mannheim, Germany.
- Mobaraki, A. E. H., and B. Söderfeldt. 2010. Gender inequity in Saudi Arabia and its role in public health. *East Mediterranean Health Journal* 16:113–38.
- Peretti-Watel, P., B. Riandey, R. Dray-Spira, A. Bouhnik, R. Sitta, Y. Obadia, and Z. Andreyev. 2005. Surveying the HIV-positive population in France. *Population* 60:449–72.
- Piff, P. K., M. W. Kraus, S. Côté, B. H. Cheng, and D. Keltner. 2010. Having less, giving more: The influence of social class on prosocial behavior. *Journal of Personality and Social Psychology* 99:771.
- Schnauber, A., and G. Daschmann. 2008. States oder Traits? Was beeinflusst die Teilnahmebereitschaft antelefonischen Interviews? *Zeitschrift für empirische Sozialforschung* 2:97–123.
- Shahab, M., F. Al-Tuwaijri, L. Bilal, S. Hyder, A. Al-Habeeb, A. Al-Subaie, Z. Mneimneh, B. Pennell, N. Sampson, R. Kessler, and Y. Altwaijri. 2017. The Saudi National Mental Health Survey: Methodological and logistical challenges from the pilot study. *International Journal of Methods in Psychiatric Research* 26:e1565.
- Shahab, M., F. Al-Tuwaijri, N. Kattan, L. Bilal, S. Hyder, Z. Mneimneh, Y. C. Lin, A. Al-Habeeb, A. Al-Subaie, A. Binmuammar, and Y. Altwaijri. 2019. Implementing the TRAPD model for the Saudi adaptation of the World Mental Health

- Composite International Diagnostic Interview 3.0. *International Journal of Mental Health Systems* 13:12.
- Trung Le, K., A. Diop, J. Wittrock, D. Al-Emadi, and E. Elawad. 2014. Gender prespecified sampling for cost control. *International Journal of Public Opinion Research* 26:441–52.
- Wenemark, M., G. Hollman Frisman, T. Svensson, and M. Kristenson. 2010. Respondent satisfaction and respondent burden among differently motivated participants in a health-related survey. *Field Methods* 22:378–90.
- West, B. T. 2010. A practical technique for improving the accuracy of interviewer observations: Evidence from the National Survey of Family Growth. *NSFG Paper* 10-013:211–25.
- West, B. T., and F. Kreuter. 2013. Factors affecting the accuracy of interviewer observations: Evidence from the National Survey of Family Growth. *Public Opinion Quarterly* 77:522–48.