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Detecting Deception In Our Research Participants: Are Your Participants Who You Think They Are?

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Abstract

There is increasing awareness of the potential negative impacts of participant deception on research, including possibly undermining reliability and reproducibility of study findings. These deceptive individuals set their personal interests above the rules of study participation thereby jeopardizing data quality as well as placing themselves and others at risk. The costs of participant deception are numerous. Over all it reduces statistical power, and may even result in false conclusions about efficacy and safety. To date most studies have not utilized sufficient methods to detect rule-breaking subjects. The purpose of this article is to bring to the attention of alcohol and other drug researchers issues involving deceptive participants. The review will suggest alcohol-specific as well as more general strategies to identify and thereby minimize enrollment of these deceptive participants. Specifically, we will identify strategies that are employed in different phases of human alcohol research and advance approaches that may be helpful to the field in reducing these contaminants. As a field, we need to be more proactive in identifying the deceptive participant even at the cost of more burdensome study enrollment. In light of the systemic nature and multi-pronged damage that this emerging pattern of deception inflicts on clinical research, it is imperative that we each assume greater responsibility for our role in mitigating this source of research contamination.

Keywords

Research recruitment; assessment; professional subject; deception; biomarkers

Introduction

There is ample evidence that many research participants engage in concealing and fabricating information to gain admission to and participate in clinical research. Lawyer and ethicist, Rebecca Dresser has named individuals who knowingly undermine research efforts “The subversive subjects” (2013). Such individuals set their personal interests above the

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rules of study participation thereby jeopardizing data quality as well as placing themselves and others at risk. To date most studies have not utilized sufficient methods to detect rule-breaking subjects.

The problems arising from deceptive subjects are best documented in clinical trials research where financial compensation is provided. One recent study (Devine et al., 2013) queried 100 participants who had enrolled in at least two studies in the past year or at least four studies in the past 3 years. Twenty-five percent of the subjects endorsed exaggerating symptoms to gain trial admission. Fourteen percent of subjects conceded they feigned a medical disorder to qualify for enrollment. Participants also acknowledged not divulging important information such as simultaneous enrollment in another study (43%), exclusionary health problems (32%), prescription drug use (28%), and tobacco and recreational drug use (20%). Other studies have documented that many subjects routinely lie about age, medical history, diet, and exercise patterns (Dresser, 2013; Abadie, 2010; Apseloff et al., 1996).

Investigations have also shown that participants often fail to report adverse events that emerge during the study, fearing they will be removed from the research. Many clinical trial participants overestimate their adherence to the study protocol (Smith, 2012). Indeed when analyzing data from 1765 subjects receiving medication across 8 psychiatric trials, drug blood levels showed that between 12.8% to 39.2% of subjects were non-adherent (McCann et al., 2015). Subjects who have admitted to deception disclosed they did so first to gain enrollment in a study, and then sustained deception in order not to jeopardize receipt of payments (Blackhart et al., 2012; Apseloff et al., 1996). Deceptive subjects share ideas for dodging exclusion criteria with other “professional” subjects (Blackhart et al., 2012). There are also smartphone Apps (“Study Scavenger recruitment App”) and websites, which assist subjects in finding clinical studies, posting financial enumerations as well as listing entry criteria and study topic (Study Scavenger, 2016).

The costs of subject deception are numerous. Overall it undermines the integrity of a study and may even result in false conclusions about efficacy and safety. The inclusion of healthy participants who feign illness in order to meet criteria for enrollment may diminish statistical power and effect size as well as increase the placebo response rate (Devine et al., 2017). From a safety perspective, failure to disclose essential information such as medication side effects may lead to false conclusions about medication safety, placing themselves and others at risk. It has been suggested that subject deception may be a significant contributor to the increasing difficulty of scientific replication and reproducibility (Shiovitz et al., 2016), which has led to changes in research review criteria by the National Institutes of Health.

Interestingly, the launch of Clinicaltrials.gov in 2000 may have inadvertently contributed to the increase in deceptive participants by establishing a single, comprehensive site where people can go to identify potential studies across the country. Indeed, one recent review reported a significant decline in the percentage of cardiovascular studies that showed a significant benefit of treatment prior to versus following the year 2000 (Kaplan and Irvin, 2015). Specifically, prior to 2000 seventeen of thirty studies (57%) reported significant positive effects of the intervention, and, in contrast, since 2000, only two of twenty-five studies (8%) have had similar findings. They concluded that “the requirement of prospective

registration in ClinicalTrials.gov registration was most strongly associated with the observed trend toward null clinical trials (Kaplan et al, 2015, p8),” with little or no evidence to support the impact of other factors such as type of placebo comparator, industry sponsorship, and transparency of reporting (e.g, a priori fixing of primary and secondary outcomes versus post-hoc selection of published variables).

Our own experiences with study recruitment and retention challenges provided part of the impetus for writing this commentary. For example, in one ongoing nicotine research project, all potential participants complete an in-depth telephone screen prior to the in-office assessment. Over two-thirds of the callers rule out based on phone screen responses. Among the 126 persons who appeared to qualify and were then invited to an in-person visit, over half (57%) were excluded at assessment. Among the 72 participants who disqualified, eleven (15.3%) underestimated their alcohol use and were detected with an elevated phosphatidylethanol (PEth) screening, thirty three (45.8%) misrepresented their current drug use and were detected with in-office toxicology screening, seven (9.7%) misrepresented their smoking status (most reporting smoking when data indicated otherwise), which was picked up by a carbon monoxide reading in the office, and twelve (16.7%) reported no current psychiatric symptoms or treatment but were found on medical record review to be currently undergoing psychiatric care. Thus, about 87% of subjects excluded at assessment had misrepresented one or more aspects of their behavior or health status both on the phone screen as well as during the in-person assessment interview. Among the 62 participants who were approved to continue in the study, an additional 3 (5%) tested positive for drugs prior to one of the procedures. An additional 27 individuals were either lost to follow up, withdrew or were no shows, suggesting that a portion of them may have avoided disqualifying for drug use by simply not continuing in the study. We found these statistics to be alarming.

The purpose of this commentary is to bring to the attention of alcohol and other drug researchers issues involving deceptive participants. This area of research may be particularly vulnerable to deceptive reporting since the information we collect (e.g., psychiatric and substance use symptoms and behaviors) are more subjective when compared to most other medical conditions (e.g., hypertension, diabetes, cancer), for which objective criteria are routinely employed. The review will suggest alcohol-specific as well as more general strategies to minimize enrollment of these deceptive participants in alcohol research, thus reducing their impact on alcohol study outcomes. Specifically, as outlined in Figure 1, we will identify the impact of deception on different phases of human alcohol research and advance strategies that may be helpful to the field in reducing these contaminants. This commentary is focused primarily on human laboratory research, since other comprehensive reviews have covered this topic for clinical trials research (Shiovitz et al., 2016; Resnik and McCann, 2015). Although the deceptive participant is more often thought of as threatening the integrity of clinical trials, human laboratory studies often enroll far fewer subjects and thus may be even more susceptible to the reduction in statistical power and associated increased risk of negative findings. Human laboratory paradigms often examine the basic mechanisms of action for behavioral, physiological, and cognitive effects associated with alcohol and are the cornerstone for translational research in the alcohol field. Thus, false

negative findings may cut short an entire area of research that may have benefited patient outcomes in the long term.

Subject recruitment strategies

Impact—In alcohol research, one of the most common problems is for subjects to misrepresent their drinking status. This concern applies to subjects inflating their drinking levels to gain study entry, posing as a person with an alcohol use disorder, as well as underestimating their drinking and instead passing themselves off as healthy control subjects (see Case 1).

Mitigation strategies—Vigilance must start at the recruitment stage to reduce the likelihood of attracting deceptive participants. There are preferred recruitment strategies that increase the likelihood of reaching the targeted participants and decrease the risk of enrollment of professional participants.

Advertisements—There is often a tradeoff between placing advertisements in media that generate a large volume of responses versus ads that more selectively target the population of interest. It can end up wasting staff time and resources to go into sources that are frequented by professional participants who are more likely to be deceptive subjects. For example, two very popular media sites for alcohol study recruitment that fall into this category are Craig's List and local free periodicals and papers. In the long run, it can be more effective and efficient to use media that reach the demographic and other indicators (e.g., actively drinking/smoking vs recovery) for the target population (e.g. country/western and talk radio for smokers; open meetings of AA). While there is growing use of social media for research recruitment, it has advantages and disadvantages as an advertising strategy. On the plus side, there is an enormous audience and it is possible to target specific subject characteristics and demographics to better reach individuals who may qualify for study participation. On the down side, since there is no direct contact with individuals, it may be even easier for respondents to be deceptive, and increased vigilance is required when using this approach.

Advertisements, including information in mandatory reporting sites such as clinicaltrials.gov, need to be written in a way that limits disclosure of inclusion/exclusion criteria. It is counterproductive to provide information that will enable participants to feed back the correct inclusion information at initial assessment. The advertisements also should be eye catching for the disease for which you are recruiting and set a low threshold for identifying with the problem. For example, alcohol advertisements can pose questions such as “do you often end up drinking more than planned?” or “do you have a hard time remembering what happened last night?” The advertisement should indicate that payment is available but not the specific amount of payment, to attenuate participants primarily motivated by money. Finally, when possible, appeal to a philanthropic motivation for study participation. For example, “give back to the AUD community and be part of the solution for an important public health problem”.

Registries—When possible, use available registries to identify potential deceptive participants. In larger institutions, clinical research management system registries may be available to determine if a potential participant is sequentially or concurrently enrolled in multiple studies within the institution. It is also possible to create a registry specific to your own research. With approval from the Institutional Review Board for Human Subject Research (IRB) and oral consent from the caller, PHI as well as demographic, substance use, physical and mental health and other phone screen information can be retained in a recruitment database to be used for future research studies. Such a database enables several functions: 1) recruit based on inclusion/exclusion criteria for new studies; 2) check for inconsistencies between recent and older phone screen and assessment information for participants who are signing up for another study (see Case Report #2); and 3) maintain a record of individuals who are documented to have been deceptive during earlier encounters with the research staff.

There are a number of national research registries that may become increasingly useful as participation grows and more studies enter subjects into these databases. Current databases include Clinical Trial Subject Database (<http://ctsdatabase.com/>) and Verified Clinical Trials.com (<http://www.verifiedclinicaltrials.com/>). These HIPAA-compliant, fee-for-service databases offer an approach to providing investigators with information on potential duplicate subjects. Local IRBs differ in the requirement for consent to access such research registries. If possible, it is optimal to do this prior to consent, to save the time and cost of an in-person visit, but very often, IRBs will require consent before engaging in this type of data extraction.

Phone screens—Similar to constructing text for advertisements, staff need to be careful to disclose as little information about qualifying/disqualifying criteria as possible to minimize the information that could be shared among potential participants. Keep questions neutral so that it is difficult for people to discern the correct answer. For example, inquire about smoking, drinking, mental health symptoms in a manner that does not identify them as inclusion or exclusion criteria. Do not stop the interview at the point when the individual disqualifies. Do not provide any feedback on the basis for disqualification. Be aware that disqualified individuals do call back providing new identifying information and attempting to game the responses based on the results of the first phone screen.

Assessment

Impact—Because phone screens take place with only verbal consent, they need to be brief and address only the major inclusion/exclusion concerns. Phone screens provide an opportunity to collect preliminary information on many behavioral and health characteristics that may confound study outcomes, including smoking patterns, other drug use, mental health symptoms and prescription medication use. In-person assessment following consent provides a venue to obtain a wider range and more in-depth information on these and other topics that may increase the likelihood of spotting inconsistencies and other signs of deception through the use of diagnostic instruments and blood and urine testing (see Case 2). It also is the first opportunity to confirm the age and identity of the individual sitting in the research office by asking to see a driver's license or other official form of identification.

Mitigation strategies

Informed consent: It is helpful to restrict disclosure of inclusion/exclusion information to only those elements that are required by the institutional review board. Within the consent process, obtain subject permission to review medical records and contact providers and family members to verify information. Disclosing the various sources of information that will be obtained to corroborate self-report (e.g., urine drug screens on the day of the assessment, biomarkers for recent drinking, medical records for health problems, registries for other study participation) can in itself promote more truthful responses from participants and may encourage individuals to withdraw who now know that efforts at deception will be detected. Loss of subjects at this stage in the research saves time and money, and preserves the integrity of the data.

The nature of the questions asked by participants at the conclusion of the consent process may also be an indicator of their motives for study participation. Suspensions should be raised when participants' only questions revolve around the timing and/or amount of payment, and show no concern for safety or efficacy issues.

Interview strategies: It is key to have experienced personnel trained in nonjudgmental interviewing approaches as the front line assessment team. It is even better to have a subset of staff with masters or higher level training in mental health available to conduct psychological/psychiatric portions of the interview. The strengths that such staff bring to the assessment include the ability to extract truthful information through the creation of an accepting, empathetic relationship; the skill to more effectively probe for mental health signs and symptoms; and the experience to distinguish truthful from nontruthful endorsements. The staff should have explicit support to share their clinical judgement about the overall gestalt of the participant's appropriateness and truthfulness with the investigators. It can be particularly helpful to have multiple members of the team engage with the participant to increase the likelihood of detecting inconsistencies. For example, obtaining a history and physical performed by the study physician or the study nurse provides an opportunity to corroborate the information that other team members have collected earlier in the interview.

In addition to staffing patterns, there are approaches to construct the assessment that can be beneficial. Ask for the same information in several different ways and at different time points during the assessment, monitoring for inconsistencies in responses. It also is useful to compare the in-person responses to those obtained during the initial phone screen for consistency. Consider using standardized instruments with normative data to facilitate recognition of extreme outliers who may represent efforts to exaggerate symptoms in order to qualify. Because professional participants share information with each other, one should continue with the assessment even after the participant has been excluded to help obfuscate inclusion/exclusion criteria. In the ideal, spreading the assessment out over several days or even weeks could increase the likelihood of detecting inconsistencies; however, in most research settings, increased participant burden and risk of drop out make this approach unrealistic.

Biomarkers: On-site and laboratory-based biomarkers for recent heavy drinking, other drug use and smoking have become more available in recent years and are now cost-effective for use in determining study eligibility. In-office measures such as a breathalyzer for alcohol, urine toxicology dip test for recent commonly misused illicit drugs, and a CO reading for smoking can provide early confirmation of specific eligibility criteria or conversely, identify exclusionary behaviors that may contaminate study findings or need to be controlled for in analyses (see Case 3).

Researchers need to be increasingly vigilant about participants who will falsify their drinking history in order to enroll in clinical trials and laboratory studies. This is a concern not only within the alcohol/drug research field, but also for the broader research community. For much basic science and clinical trials research, the unintentional inclusion of individuals with an alcohol or drug use disorder could potentially distort outcomes. We think it is now mandatory to obtain a biomarker for recency and severity of alcohol use to confirm participant self-report. Multiple biomarkers with differing duration and thresholds of detection are available, such as carbohydrate-deficient transferrin (CDT), PEth, and ethyl glucuronide (EtG) (Litten et al., 2010). For example, urinary EtG can detect small amounts of alcohol use for up to three days from last drink, whereas PEth provides a longer look-back and offers more evidence for chronic alcohol consumption. In our own recently completed clinical trial of ondansetron treatment for heavy drinking in HIV-infected persons, we implemented the requirement of a positive PEth at screening as an inclusion criterion when it came to our attention that many individuals were inflating their self-report of recent drinking in order to qualify for the study. In general, we do not have definitive cut-off values to clearly demarcate light vs moderate vs severe drinkers (Viel et al., 2012; Schröck et al., 2014); this is clearly an important area for research investment. We believe that biomarker testing should be standardized and incorporated into the breadth of human research across the alcohol field. This will not only improve the quality of the data and reduce heterogeneity in the findings, but it will make comparison between studies and meta-analyses more meaningful.

A variety of in-office, dipstick style tests are currently available with different drug detection combinations, allowing investigators to tailor testing to those illicit drugs most commonly used in their recruitment area (see Case 4). In obtaining urine specimen for drug testing it is important to closely monitor participants to prevent presentation of bogus samples. One of the most effective strategies is confirming that the sample is the right body temperature and color; temperature-sensitive collection cups are available to help with this process. Notably, many in-office urine test kits for drug detection are designed to have a high threshold for signaling a positive finding. When available, the use of kits with lower limits of detection will reduce false negatives and is therefore preferable, particularly where safety is a primary consideration.

Addition of a comprehensive and often more sensitive urinalysis panel that not only detects illicit drugs but also picks up many psychiatric medications also can be helpful; drug classes that are most likely to be detected include antidepressants and anxiolytics. These tests also may provide important information on undisclosed diagnoses. While such tests are not available in dipstick form, generally hospital or other CLIA laboratories will offer this

service at a modest cost. The breadth of classes of medicines currently under investigation for alcohol pharmacotherapy makes it imperative that we have accurate information on concurrently prescribed medications given the high potential for drug interactions. Informing individuals of these upcoming tests has the added benefit of improving the accuracy of their self-report, thereby reducing staff burden and study expenses by excluding these individuals at the time of the phone screen or initial assessment.

Additional sources of information: Informed consent is required prior to accessing most additional sources of information such as medical records, research databases and family members who would corroborate participant information. Issues for consideration include: Are there health concerns that would place participants at risk or contaminate study findings; and are participants enrolled in other recent or concurrent research studies? We recommend requesting consent to access medical records as part of the initial informed consent procedures. These records can provide information on medical and psychiatric diagnoses, prescription and nonprescription medications, supplements and herbal formulations (see Case 5). Records also may provide additional information on behavioral health areas that are routinely addressed at medical visits such as smoking, alcohol use and illicit drug use. Of importance, the health record identifies history of and current diagnoses that place participants at risk from study procedures. One example is the quantification of recent radiation exposure from CAT, x-rays and other sources of medicinal radiation that may exclude a participant from imaging studies that involve radiation exposure. Even in this age of the electronic medical record, the investigator is generally only tapping into their immediately available health care network. Since it has become quite common for many individuals to access health care through multiple venues (e.g., emergency rooms, urgent care centers, minute clinics), it is admittedly a challenge to assemble a complete medical history on a participant.

Put the full package of information together to look for clues: Some participants appear to be “too good to be true.” They report no current or lifetime signs or symptoms of any behavior/mental health problems. They do not report any medical problems and have never taken a prescription medication on a regular basis. They deny ever using other substances. For AUD subjects, the absence of co-occurring disorders, particularly smoking, may be cause for suspicion. Rates of comorbid disorders are sufficiently elevated in this population that it is highly unlikely that no additional problems will become known during a comprehensive assessment. The pristine AUD participant is a myth!

Study procedures

Impact—The need for vigilance does not stop once a participant is enrolled.

Mitigation strategies

Continued assessment data collection is important prior to each procedure: It is important to obtain drug assays for recent alcohol and other drug use prior to each procedure (see Case 6). A person who is a regular drug user may be “clean” at assessment when they are expecting testing but may not be able to stay consistently drug-free across multiple procedure days. Similarly, the participant may start a new prescription and will not reveal

this unless queried across the multiple days of study testing. Detecting inconsistencies in self-report is also promoted by the use of multiple assessments; most participants simply will not remember accurately what they reported on prior occasions.

Completing the study on an inpatient versus an outpatient basis: Conducting studies on an inpatient unit provides a high level of control over multiple sources of experimental contamination including recent drinking and drug use, medication use, sleep patterns, and dietary control. This can be particularly useful in medication studies since direct observation of medication ingestion is possible under nursing supervision on the inpatient unit. Otherwise, the investigator has to rely on self-report, fallible smart phone technology or drug levels, which cannot guarantee full compliance. The recent decrease in government and industry funding support for inpatient research beds has had a detrimental impact on bed access and thereby has limited this quality control approach. If the study is conducted on an outpatient basis in which direct observation is not feasible, a number of strategies can be employed to improve compliance. Use of markers such as riboflavin, acetazolamide or other agents that are detectable in urine or breath as well as smart capsules containing microchip technology provides additional confirmation of compliance beyond what medication blood levels, capsule counting and self-report can provide. Use of MEMs caps in conjunction with newer smart phone technology can provide some photographic and time-stamped evidence that medications were taken on time and as prescribed. These technologies have recently expanded to include novel artificial intelligence platforms that can be downloaded on mobile devices to assess dosing compliance and other behaviors related to medication adherence (Bain et al, 2017). Unfortunately, although these are useful mitigation strategies, the determined deceptive subject can circumvent these systems as well.

Study payment as an incentive to misreport: Most of our clinical trials and all of our laboratory research depend on generous participant payments to incentivize participation. Although there are many motives leading to subject deception, money can be a considerable driver of this behavior. Since it is not possible to conduct these studies without financial payments, it is imperative to structure payments in a way that minimizes their negative impact. One approach is to condition the amount of payment on the consistency between self-report and biomarkers of alcohol and other drug use. For example, individuals who self-report regular, heavy drinking but whose alcohol biomarker is negative would forfeit a portion of the assessment payment. Similarly, individuals who report no other drug use but test positive on a urine dip test for illicit drugs would be penalized on their payment. Informing individuals of these upcoming tests has the added benefit of improving the accuracy of their self-report, thereby reducing staff burden and study expenses by excluding these individuals at the time of the phone screen or initial assessment.

The use of bonus payments at study completion creates another opportunity to incentivize good behavior. For example, if drug testing occurs at each visit and a positive test results in study termination and forfeiture of the study bonus, participants may be more likely to refrain from drug use over the course of the study.

Finally, the actual methods of payment can influence the attractiveness to deceptive participants. For example, offering gift or debit cards in lieu of cash may decrease interest by

cash-motivated participants. Also, delaying payment by sending a check upon study completion may mitigate deception.

Summary

As enumerated throughout this paper, there are many ways in which deceptive participants undermine the integrity of clinical research efforts. While each one of us conducting clinical research has uncovered some version of these deceptions in our own laboratories, most investigators underestimate the system-wide prevalence and destructiveness of the problem. In light of the systemic nature and multi-pronged damage that this emerging pattern of deception inflicts on clinic research, it is imperative that we each assume greater responsibility for our role in mitigating this source of research contamination.

We have pointed out the importance of greater vigilance and recommended some basic interventions to lessen these negative effects. As a field, we need to be more proactive in identifying the deceptive participant. There are many reasons that some investigators in the field have adopted a “don’t ask, don’t tell” mentality. One of the most salient reasons for our passive complicity is the urgency and pressure for maintaining robust study enrollment, with the ultimate goal of publication and continued funding. Additional concerns include the pressures of time and money to build out the infrastructure and fund the procedures that are necessary for improved screening. There also are issues of staff resistance to overcome including the discomfort of confronting deceptive participants.

Additionally, it is important to highlight that most of the recommendations made in this paper require IRB approval to operationalize. At this time, many institutional IRBs appear to tip the scales in favor of individual rights versus responsibility to society and accumulation of valid research results. Going forward, we hope that these recommendations may lead to a dialogue across researchers, universities and funding agencies to consider balancing priorities which protect both the individual and the integrity of the research process.

Hopefully the recommendations outlined above will result in a more pristine group of research participants with reduced, unreported major comorbidities and other study confounders. Although sample size may suffer somewhat, data quality should improve, resulting in larger effect sizes through a more rigorous test of the study hypotheses. The product will be more reproducible and valid findings due to the increased rigor in our research. The time has never been more critical for dealing with this problem given shrinking research budgets and therefore the need to invest funds wisely and effectively.

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Case 1: The healthy control who drank too much

A recent participant applied for a smoking study in our laboratory for which drinking at levels in excess of NIAAA social drinking standards is an exclusion. Through biomarker testing following the assessment interview, he was found to have very high recent levels of alcohol use identified through phosphatidylethanol analysis (PEth = 844 ng/mL USDTL). In a follow-up telephone call, the participant acknowledged a very heavy regular pattern of drinking and symptoms of severe DSM 5 alcohol use disorder. What is striking is that he shared with us that his study participation history included being a healthy normal control in a recent brain imaging study at a different institution.

Case 2. Tripped up on the trail of medical evidence

This participant passed the initial phone screen for one of our smoking studies that excluded persons with other substance use and mental health disorders, and was invited to the in-person assessment. On the MINI International Neuropsychiatric Interview (Sheehan et al, 2010), the participant denied all mental health symptoms as well as alcohol use disorder symptoms, including denying ever having experienced a binge drinking episode. Having obtained informed consent to review hospital records, we found documentation of an ED encounter two weeks earlier for injuries sustained during a fall under acute alcohol intoxication. Using the information retained in our IRB-approved in-house recruitment database, we also uncovered previous phone screen records from one of our earlier studies that indicated the participant had consented to and ruled-out due to current pharmacotherapy for depression.

Case 3. Biomarker evidence leads to the truth

During recruitment for a smoking study, a 37 year old woman reported smoking 30 cigarettes per day, 7 days per week on her telephone screen but then blew a 4ppm carbon monoxide reading during the in-office interview (generally, <8 ppm is considered to be non-smoking). After being informed of the results, she first stated that she had “just smoked a cigarette within a half hour of arriving.” Then she stated that she had cut down to 1 – 2 cigarettes per day in the last month due to financial constraints. Finally she stated that she had no cigarettes and indicated that she had only taken “a puff of one cigarette on her way to the assessment.” She was dismissed from further study participation.

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Case 4. In-office drug screen provides a quick rule out

During a recent phone screen, one participant report smoking marijuana “on occasion at a party”, but indicated that the last episode had been over a month earlier. He also denied any other illicit/street drug use. He was invited for the in-person assessment during which he tested positive on the in-office dip test for cocaine and THC. The participant stated, “Well, I party a lot. I went to a party in Pennsylvania on Monday and did an oxytocin and cocaine.” He was dismissed from further assessment.

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CASE 5. Medical records help clarify unusual interview behaviors

This participant was screened for eligibility to be a healthy control participant for one of PET imaging studies. On the phone screen and during the in-office MINI, he maintained that he did not have mental or physical health problems and was not taking any prescription medications. However, throughout the in-person assessment, he displayed some unusual behaviors, such as repeatedly cupping his hand over his mouth to smell his breath. The electronic medical record indicated he carried the diagnosis of Schizophrenia and had undergone a craniotomy for a neuroblastoma excision. It also indicated he had recently completed a course of high dose prednisone.

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CASE 6. Repeated testing may yield unexpected results

A 55 year old male indicated on phone screen and again during the in-person assessment that he was a social drinker and did not use other drugs. His information was confirmed by a negative Peth and a toxicology screen. However prior to the first experimental session, his toxicology screen came back strongly positive for recent cocaine use. The participant denied cocaine exposure when confronted with the toxicology results. The session was cancelled.

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Figure 1.
Strategies for reducing the impact of deceptive participants across research phases.