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Assessing the Acceptability of Individual Studies that use Deception: a Systematic Review of Normative Guidance Documents

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Research participants are often deceived for methodological reasons. However, assessing the ethical acceptability of an individual study that uses deception is not straightforward. The academic literature is scattered on the subject and several aspects of the acceptability assessment are only scarcely addressed, which parallels reports of inconsistent ethics review. Therefore, we aimed to investigate where normative guidance documents agree and disagree about this assessment. A PRISMA-Ethics-guided systematic review of normative guidance documents that discuss deception of research participants was conducted. Our search strategy resulted in 55 documents that were subsequently analyzed through abductive thematic analysis. While guidance documents mention little about specific risks and opportunities of deception, our analysis describes a rich picture of the thresholds for acceptability of the risks and benefits of deception and their integration, the comparison with the risk-benefit analysis of alternative non-deceptive methods, and the bodies or people who are positioned to do the review. Our review reveals an agreement on the general process of assessing the acceptability of studies that use deception, although significant variability remains in the details and several topics are largely or completely unaddressed in guidance documents.

Keywords: deception, guidelines, research ethics, systematic review, acceptability

Introduction

The question of whether participants may be deceived during research studies has been a matter of debate in research ethics for several decades. Deception is frequently used across a range of research domains (e.g., psychology, marketing research, human-computer interaction research, biomedical and pharmaceutical sciences, criminology, political sciences and sociology) and paradigms (e.g., obscuring the study purpose, fabricating cover stories, giving false feedback, employing confederates and secret shoppers, and using a fake identity in covert ethnography and correspondence studies).

While the academic ethics discourse on deception provides guidance on determining whether deception is acceptable across contexts, paradigms and disciplines, assessing the acceptability of individual studies using deception may still be a difficult task. Despite previous work in this area (e.g., Sieber 1982, 1983), Kemmelmeier (2003) described nearly two decades ago that there are several problems remained with the risk-benefit analysis in studies that use deception, such as inconsistencies in the types of risks and benefits that are included and which thresholds of acceptability are used (Kemmelmeier 2003). Similarly, others have described inconsistencies in ethics review of deceptive research (Kimmel, Smith, and Klein 2011; Ceci, Peters, and Plotkin 1985). Potential underlying causes could be a lack of a clear decision-making scheme or of supporting empirical evidence (Kemmelmeier 2003; Wendler and Miller 2008; Herrera 2003; Gelinas, Wertheimer, and Miller 2016). Researchers and policy makers should look for such a policy that would sufficiently protect individuals and at the same time will not be too restrictive and allow important studies to be carried out (Wendler and Miller 2008).

The academic literature reveals a diverse set of risks and benefits that are associated with the use of deception and which form a good starting point in the acceptability assessment. Often mentioned are the risks to participants, such as an infringement upon participants' rights (e.g., autonomy), as well as potential emotional and social harms (e.g., reputational damage) (Wendler and Miller 2008; e.g., Kimmel 2012; Rhodes and Miller 2012; Roulet et al. 2017). However, subjects might also benefit from participation in research (e.g., gained self-insight), as might researchers conducting these studies (e.g., a better reputation), although for the latter group risks have also been described (e.g., moral distress, safety concerns) (Maguire et al. 2019; Marzano 2018; e.g., Falcone 2010; Roulet et al. 2017; Kimmel 2012; Kluczewska and

Lottholz 2021; Uz and Kemmelmeier 2017). Furthermore, deception might lead to suspicion or less trust from the participant, community or society towards the researcher, study, or science and its institutes in general; this in turn may for instance bias participant behavior when subjects expect to be deceived (e.g., as can be the case for psychology students participant in research for credits) (Kimmel 2012; Hertwig and Ortmann 2008a; Baumrind 1978). However, that does not mean that deception is necessarily damaging to relationships, as it might also be experienced as entertaining or as a method that is necessary to reveal otherwise difficult to gain self-insights (Benham 2008; Uz and Kemmelmeier 2017). Important and often mentioned are the benefits to science such as a decrease in biased participant behavior or in the necessary study resources, as well as an increased access to difficult-to-reach communities (Kimmel 2012; Roulet et al. 2017; Hilbig, Thielmann, and Böhm 2021; Sieber, Iannuzzo, and Rodriguez 1995). Methodological risks include unintended effects of the deception on the behavior of participants being studied (Kuhlen and Brennan 2013; Bulmer 1982). Finally, deception may lead to valuable knowledge and ensuing scientific and social change, but also to an increased day-to-day suspicion (e.g., towards clinicians) (Bortolotti and Mameli 2006; Roulet et al. 2017; Kimmel 2012; Baumrind 1978; Bulmer 1982; Wendler and Miller 2008). Despite this large collection of theoretical risks and benefits, the current empirical evidence for them is inconclusive (Wendler and Miller 2008; Uz and Kemmelmeier 2017; Galang 2018; Hertwig and Ortmann 2008a; Kemmelmeier 2003).

Ideally, assessing the acceptability of a deceptive study includes identification and weighing of the different kinds of risks and benefits, integrating them and making a general acceptability conclusion which is subsequently compared with the risk-benefit analysis of non-deceptive alternative methodologies that try to answer the same research

question (Kemmelmeier 2003). In contrast with the discussion of specific risks and benefits, the academic literature on the other aspects is much less developed. In addition to the academic discourse, researchers and ethics reviewers may look for research ethics guidance documents that discuss the assessment process. However, several of these guidelines have been criticized for providing rather unspecific or ambiguous assistance with assessing the acceptability of deception (Kimmel, Smith, and Klein 2011; Pittenger 2002). A more mixed interpretation came from an analysis of nine research ethics guidelines on covert research, where Parder et al. (2019) found five documents requiring a study to pose no more than minimal risk to participants, a sufficient scientific or social value, and a lack of an equally good non-deceptive alternative. Three guidelines merely needed covert research to be justified and one document was generally against this kind of research.

We decided to conduct a thorough analysis of a large set of research ethics guidance documents that have touched on the topic of deception. Our original aim was to provide some clarification on the assessment process by looking at the following: (i) What are the specific risks and benefits of deceptive studies that should be taken into account? (ii) How do guidelines frame the acceptable risk levels for these studies? (iii) How to compare the acceptability of the deceptive method with those of non-deceptive alternatives? And (iv) what should ethical review and oversight of these studies look like? To answer these questions, we set out to compare guidelines in order to find out on which recommendations they agree or diverge, and to look at which specific guidance they provide. Ultimately, this review of recommendations in existing guidance worldwide may potentially improve the existing ethical assessment and design of individual deceptive studies, as well as provide some additional assistance and clarity to ethics reviewers and researchers evaluating such studies.

Besides this study, we conducted another analysis on the same rich dataset for a different research question, namely on the implementation of informed consent and debriefing in studies that use deception and was based on data that was largely separated from the guidance on the assessment of acceptability (manuscript in review).

Methodology

The methodology of acquiring and analyzing our dataset was more comprehensively described in the paper on informed consent and debriefing in studies that use deception (see Supplemental File).

Briefly, following preregistration, we collected a large amount of normative guidance documents from reference lists and a database search following the PRISMA-ethics guidance for systematic reviews of ethical literature (Kahrass et al. 2021). 55 guidelines that mentioned deceiving research participants for methodological reasons were retrieved. Using abductive thematic analysis, these were subsequently scrutinized for statements about the assessment of acceptability of individual deception studies as outlined in the introduction (Thompson 2022). Both document retrieval and analysis were conducted independently by K.V. and T.K., with frequent discussions of the results of every step of the process.

Results

The list of retrieved documents can be found in Table 1. The characteristics of the individual documents are also more elaborately described in the paper on informed consent and debriefing (see Supplemental file for aggregated characteristics). The central themes which we discerned during our analysis differed slightly from our initial research questions: (i) the identification of specific risks and benefits that could be due to deception, (ii) the thresholds that define which level of risk is acceptable or which

level of benefit is sufficient, (iii) merging the analysis of risks and benefits, (iv) comparing the risk-benefit analysis of the deceptive method with the alternative non-deceptive methods and (v) recommendations on the roles of the involved parties in this acceptability assessment process. The following sections of the paper contain passages from the included guidelines that reflect the prototypical text fragments on which we have based our codes and themes.

[Insert Table 1 here]

What are the specific risks and benefits of deceptive studies that should be taken into account?

There is variation within the analyzed documents regarding the extent to which the use of deception is accepted. Most guidelines conditionally accept deception. For example, the document on *Ethical Issues in Patient Safety Research: Interpreting Existing Guidance* by the World Health Organization stated: "[r]esearchers have a commitment to telling the truth, but omission of some information (e.g. the specific purpose of the study) is considered acceptable in some situations."[3] However, other documents required that it is to be avoided as much as possible.[6,25,28,48,53] Similarly, several documents stated that deception or certain forms of it remain controversial,[1,2,16,54] and/or that the analysis of studies that use it require careful scrutiny.[33,38,42,42,54] In order to bridge this general appraisal of studies that use deception to the assessment of individual studies, it might be interesting to look at the individual arguments (i.e., risks and benefits) for and against its use.

In regard to reservations and objections against deception, some guidelines say that researchers have a commitment to tell the truth[3] and that participants are entitled to it.[2] Furthermore, several guidelines contain a general warning that deception entails risk

of harm to the participants,[1,2,19] while others point more specifically to resenting being deceived,[1,2] emotional damage,[16] or repercussions for employees being involved in a mystery shopping study (e.g., reducing time spent per visit of studied professionals when these visits may cost them income).[19,33,36] Concerning the violation of ethical principles, it is sometimes argued that there is a violation of the right to be informed,[1,2,30,38,42] the right to self-determination[6] or the right to privacy.[5,15,16,30,38] Several documents also mention other potential impacts that reach beyond the participant, such as a damage to trust in research or the researcher[3,6,1-1,16,40] or the reduction of reciprocity in the researcher-participant relationship which might in turn reduce the quality of the data.[16] Potential harms to the researcher (e.g., concerning safety or reputation)[33,36] and the controversy that covert research may bring to the research findings are also listed.[16] For instance, according to the *Ethical Guidelines* of the Social Research Association, "[t]he feelings of researchers asked to engage in deception (even on a minor level) must be considered,"[36] which could potentially refer to researchers' moral distress.

With regards to arguments in favor of the use of deception, most often the scientific benefits are mentioned, such as the increased methodological benefits[13,16,25,38,42,45] that might be the consequence of an increase in reliability[16,49] or validity.[1,2,6,8,16,21,46,54] Many guidelines mention that this could be the result of the deception giving access to unbiased and natural participant behavior.[1-3,7,13,15, 16,19,20,21,25,32,36,41,45,49,51] Other reasons could be that it also provides a way of reaching populations that are otherwise difficult to access (e.g., groups with secretive interests),[16,22,30] or that it might facilitate an increased experimental control.[16] But besides these methodological benefits, it is sometimes described that there could also be benefits to the participants, their communities, the researchers or society.[5,22,37] For

example, the risks to participants might be reduced compared to those associated with a non-deceptive alternative method (e.g., studying aggression with a confederate to prevent violence from escalating beyond an agreed threshold),[16] as might the risks to researchers.[22,37] Moreover, organizations, communities and/or society may benefit from the knowledge that resulted from the study.[6,16,19,36]

> (…) those who see deception as being acceptable usually justify this in terms of a balance between the needs for the data and the potential harm of overt approaches. (…) Others would disagree (…) They (and many others) talk about the need for openness on the part of the interviewer about all aspects of a study. The reciprocity of the relationship between researcher and researched is emphasised, and how this leads to fuller, more accurate data. (16)

The analysed guidelines that discuss the use of deception did not mention the assessment of magnitude or probability of these harms and benefits. Thereby those documents seem to leave significant room for interpretation and potentially inconsistent implementation by research ethics committees (RECs) across different studies and different scientific disciplines.

What are acceptable levels of risk involved in a study using deception?

In general, statements about the acceptable risks largely focus on the risks for the participant, whereas those about the benefits focus mainly on the scientific and social value of a study. Two approaches are taken in the documents. A first one is to set a threshold for the acceptable level of risk due to the entire study. This could be either about the overall risk to participants or specific kinds of risks to participants. Some documents also mention the acceptable level of overall risk to non-participant populations. A second approach concerns the level of acceptable risk that is the

consequence of the deception itself. An overview can be found in Table 2.

Acceptable level of risk due to the entire study

There is significant variation in how guidelines describe the acceptable level of risk due to the entire study. Most guidelines seem to agree that the threshold should not to be too high, but vary in how they specify it. In what follows, we will describe three acceptability thresholds of risk. First, there is the minimal risk threshold, requiring the study to pose no more than minimal risk. However, there is no single precise definition of minimal risk that is shared by the different documents. One definition is that there is no increased risk of harm.[46] Another kind of definition is present in three guidelines which define minimal risk as a risk not being greater than the risks of daily life,[1] than the risks in those aspects of daily life that relate to the research,[5] or the risks of daily life for a person of a specific age and/or gender.[2] Some used yet another definition, describing the minimal risk as the risk not being greater than the risks encountered during the performance of routine physical or psychological tests,[1,51] which one guideline specifies as applying to an apparently healthy person.[2]

Deception is not permissible in cases in which the study exposes participants to more than minimal risk. (1)

Second, there is the less than minimal risk threshold. This level of risk represents a threshold of acceptable risk that seems to be lower than the "no more than minimal risk" level, instead requiring either "less than minimal risk" or no risk at all. Confusingly, the *National Ethical Guidelines For Biomedical and Health Research Involving Human Participants* by the Indian Council of Medical Research states that studies using

deception are always more than minimal risk.[42]

The third risk threshold is the unspecified low risk threshold. This one is even less specific than the previous ones (see Table 2). Also here, some documents give a definition. One guideline defines a risk that is more than low risk as that which, even if unlikely, will cause more serious harm than a discomfort.[40] Another defined minimizing risk as reducing the number, magnitude and probability of the risks as far as feasible.[2]

> Participants should not be deceived if there is any reasonably anticipated risk to the participants or if the harm cannot be offset or the extent of the harm be reasonably predicted. (7)

Besides these levels of acceptable risks for the overall risks of an entire study wherein participants are deceived, some guidelines also specify thresholds for specific participant risks. For instance, it may be required that no particularly sensitive data are collected.[27] Other documents need the participant to retain the financial benefits that are due to commercial exploitation of the derivatives of their data,[40] or due to their professional activities being under investigation in mystery shopping studies.[19,33] Besides these thresholds for specific participant risks, some guidelines also specify acceptable levels of risk for non-participant populations (e.g., bystanders, researchers). For instance, some documents require no more than minimal risk to inadvertent bystanders[5] or no harm to the relationship between the community and the researchers or research.[46] Finally, two mystery shopping guidelines require that the risks to mystery shoppers are minimized as well.[19,33]

> Ideally the mystery shopper should make a purchase that reflects the type of business of any given outlet. (33)

Acceptable level of risk due to the deceptive method

Besides the threshold for the acceptable risk of the entire study, a group of documents also describe thresholds for two categories of risks that are more direct consequences of the deception. One category concerns those that are due to the content about which participants are deceived, where this content should not pose a level of risk that reaches above a certain threshold (see Table 2). These thresholds largely overlap with those found for the entire study risk. As a second category, some documents say that the deception itself may not cause a certain level of risk. It is worth saying that some documents only mention the acceptability of the risks due to the deceptive method and not due to the entire study.[8,24,26,54,55]

> Deception is not permissible, however, in cases in which the deception itself would disguise the possibility of the subject being exposed to more than minimal risk. (2)

[Insert Table 2 here]

What are the required levels of benefit or value in a study using deception?

Unlike the acceptable level of risk, most guidelines describe the level of benefit in terms of value for science or society. For this assessment, guidelines focus on the value of the entire study. Several documents also look at the necessary value of the deception itself, but do this rather by comparing the value of the deception to that of non-deceptive alternatives. This approach is therefore later described in the dedicated subsection on non-deceptive alternatives. Nevertheless, one guideline does mention that a less credible

deception may decrease the value of a mystery shopping study.[33]

When describing the threshold of necessary value for the study overall, there seems to emerge a spectrum of stringency across guidelines. This spectrum ranges from requiring an exceptional importance of the study to the need for a value that is sufficient to justify the study (see Table 2). In contrast to risk levels, the required levels of beneficial value are not further defined in the guidelines. Furthermore, the *EU-Code of Ethics for Socio-Economic Research* developed by the RESPECT-project points out an underlying problem for this assessment: "There remains an issue of who decides how important it is to obtain the knowledge in question. ln some cases, the justification is based just on academic arguments relating to the importance of any knowledge. Other arguments are based on the need for understanding to help support some groups or address the harm caused by others."[16]

> Sociologists do not use deceptive techniques unless they have determined that the following conditions have been met: (…) deception is justified by the study's prospective scientific, educational, or applied value (…). (10)

The kind of necessary value is sometimes specified as concerning scientific value[10,11,14,24,26,28,49] and/or social or applied value,[1,3,10,11,14,26,28,42,49] although these concepts could overlap. Some point towards more concrete values, such as advancing health.[45] In the context of covert research, several guidelines declare that this kind of research might be justified for gaining access if access is obstructed by people in powerful positions,[4,30] to study these people in power,[22] or to research people conducting harmful, violent or illegal activities.[16,37,42] However, one guideline made a sidenote that it is rather the exceptional importance of the topic instead of the difficulty

to gain access that justifies the covert research.[39]

How should the analysis of the risks and the analysis of the benefits be integrated?

Some guidelines give advice on how to bring together the assessment of the risks and the benefits in order to reach a conclusion. Making a general provision, several guidelines point towards the importance of the potential benefits outweighing the foreseeable risks,[5,16,25,29,36,40] of maximizing benefits and minimizing harms,[11] or of the ends justifying the means.[39] There is however variation as to the specific risk and benefit/value categories to which different documents attach more or less weight when describing the risk-benefit balance. First, concerning the benefits, the emphasis could either be on the benefits in general (direct and indirect benefits),[5,11,25] the benefits for the data or research objective[16,29] or the public benefit.[36] Second, regarding the main risks that need to be justified, guidelines emphasize either the general risks,[5,11,16,36] the risks to the participants and to the community's trust in the research or researchers,[40] or the harms associated with not seeking consent.[2] Third, combining a specific risk category that has to be balanced with a specific value category, several guidelines argue for a specific risk-benefit trade-off wherein the benefits for society or science should justify the harms to the participant.[2,6,16,26,27,36,40,42,45]

> Information for participants may be withheld from participants only when the necessity to preserve the integrity of the research outweighs the interests of the participant, or if it is shown to be in the public interest. (26)

For this trade-off between benefits for society or science and harms to the participant,

one document describes a potential slippery slope effect that could eventually make it very easy to disregard the wishes of the participants in favor of the purposes of the research.[16]

Some guidelines allow for a deviation from this standard risk-benefit balance. One document argues for adapting the trade-off when participants are vulnerable, requiring a greater effort to maximize benefits and minimize harms.[5] Another guideline did not define a level of acceptable risk in the case where deception aims to expose illegal activity, instead requiring that the value of exposing the activity justifies the risks to the participants.[40] This provides the possibility of adapting the threshold of acceptable risks to the participants depending on the value the study provides.

How to compare the acceptability of the deceptive method with those of non-deceptive alternatives?

Generally, guidelines require an additional benefit of the deception over non-deceptive alternatives, due to it being a necessary method to obtain the desired data or study goals.[2-8,17,23-25,27,37,40,42,46,48,52] This is often described as the non-deceptive alternative being impracticable, impossible or unfeasible. Some documents are more specific and describe it as being overly demanding to execute or not leading to adequate study results (see Table 2). A definition of impracticability in this context is sometimes added, referring to the incapability of being put into practice due to a difficulty that exceeds mere inconvenience,[5,9,25] although the term impracticability may also refer to the insufficiency of the method to obtain the desired goals or data.[5] A sufficiently burdensome difficulty for executing the non-deceptive alternative could for instance be a significant delay or financial cost.[9] One guideline further stated that a research method might be possible to execute, but still impracticable.[5] Taking another angle, in one document the paper of Sieber (1982) was referenced that mentioned the possible

justification of deception when non-deceptive alternatives incurred more risks on the participant, although the guideline itself did not take a clear stance on this issue.[16]

> The determination that the research could not be practicably carried out is not a matter of mere inconvenience to the research process. Rather, there need be a plausible concern that either the conduct or the findings of the research might be adversely affected by the consent process. An adverse effect might include a substantial delay or increase in cost. (9)

Who should assess the ethical acceptability of a study using deception?

An additional source of variability in the assessment process concerns who should do the assessment. Most guidelines agree that the ethical assessment of a study that uses deception should be done by a REC.[1-3,5,6,10,14,15,22,23,25,28,37,39,40,42-54] The standard practice reflects it being the researchers' responsibility to justify the need for deception[2,5,15,25,40,45,50] after they have considered the acceptability of the study themselves.[2,3,5,10,14,37,46] Some guidelines seem to make a more general statement, saying that the ethics review could also be taken up by an unspecified authoritative ethics review body,[10,14,15,40] which should have sufficient expertise in the applicable research domain.[10] Other documents broaden the scope of who could or should do the ethics review even further, stating that advice should "be sought from the research supervisor, local research managers, university ethics committees and/or funders,"[39] or that that some form of independent assurance should be sought.[36] Moreover, some point out that it might also be advisable to consult community representatives.[5,38] For instance, the *Recommendations on Good Practice in Applied Linguistics* by the British Association of Applied Linguistics suggests that "[a] degree of reflexivity, together with consultation with relevant parties (for example, a site manager if working with an

external organization), can help researchers to judge the acceptability of such [covert] research."[38]

> Where limited disclosure does not involve active concealment or planned deception, ethical review bodies may approve research provided researchers can demonstrate (…) (40)

Some documents require different types of review or approval. For instance, one document required peer review next to ethics review.[15] Also, sometimes ethics review is deemed unnecessary when the study is prohibited by law,[40] whereas in other cases an approval by law or competent authorities may be seen as an alternative for ethics review.[2,25] One document brings the approval by law and independent review together to some extent by specifying the need to consult the institution's legal office when deciding whether a study falls under the exception for consent of the European Union General Data Protection Regulation (GDPR).[26]

Discussion

With this study, we aimed to develop an insight into the converging and diverging recommendations in research ethics guidance documents on assessing the acceptability of individual studies that use deception.

Usually, deception was deemed acceptable under certain conditions. However, as was described by Kemmelmeier (2003), we found that most guidelines mainly focused on risks to the participants and the benefits to science and society without taking into account the entire array of possible risks and benefits. This is a trend that is also observed in some academic work (e.g., Seeman 1969; Sisti, Segal, and Jaeger

2013). Moreover, documents devoted little space to the description of specific risks and benefits for deceptive studies and varied significantly in which ones they mentioned. Risks that were mentioned in the analyzed guidelines pertain to participants, the research-participant relationship or the science-participant relationship, whereas mentioned benefits pertain mostly to methodological issues.

Underlying factors that influence the process of assessing the presence, magnitude and likelihood of specific harms and benefits were not mentioned in the documents. Nevertheless, the academic literature describes that the likelihood ascribed to harms and benefits occurring may depend on the underlying theoretical framework (e.g., will behavior be biased if deception is not used?), the available empirical evidence and the influence of the study topic on how much certainty is required to draw the study conclusion (Cook and Yamagishi 2008; Hallegatte and Ertz 2020; Elliott 2022, 10-1; Kemmelmeier 2003). Related to this, Resnik (2021) recently argued for relying on sufficient empirical evidence and certainty of a risk or benefit when deciding whether a study is acceptable. Other potential factors that might influence study benefit are the type of research (more uncertain for fundamental research), the research area and the possibilities for science communication (Binik and Hey 2019; Ma and Agnew 2022; Elliott 2022, 8; Hertwig and Ortmann 2001). The latter may however be hampered by restrictive editorial policies for deceptive research as can be the case in the field of experimental economics (Cason and Wu 2019).

Numerous documents adopted a threshold for the acceptability of risks in deceptive studies. These did, however, vary substantially in either the level of stringency or whether the threshold applied to the whole study or merely to the more direct effects of the deception component. Also, guidelines did not differentiate between

subtypes of harms, such as harms to those interests that are common to everyone and to those that are more individual (London 2006).

Concerning the level of risk the entire study may pose, three types of thresholds were discerned based on the differences in stringency: the minimal risk threshold, the lower than minimal risk threshold and the unspecified low risk threshold. However, due to a lack of a consensus definition for these thresholds, it might as well be that the different conceptualizations of the thresholds overlap or lie on a continuum instead of representing distinct levels of acceptable risk. The minimal risk threshold was frequently mentioned in documents and is in line with the argument from the academic literature that the participant might not be able to fully grasp the study risks without being completely informed (O'Neil and Miller 2009). As in other research areas, more precise definitions of the notion of minimal risk varied substantially (Kopelman 2004). This variability could be further increased when one takes into account additional definitions from the academic literature that were not mentioned in the guidelines, but which could nevertheless be interesting for deception. For instance, regarding a related issue in research ethics, Wendler (2005) suggested a more specific threshold for acceptable risks in the case of research with subjects who lack the capacity to consent and who are not expected to directly benefit from the study. In such a case, the "charitable participation standard" requires a study not to exceed the risk that is deemed acceptable for other charitable activities these people participate in in daily life. Some documents adopted the lower than minimal risk threshold, accepting either risks to participants that are "less than minimal" or no risks at all. On the other hand, the unspecified low risk threshold required risks to be low, minimizable or for there to be no reasonably predictable (serious) risks. These latter thresholds leave more room for interpretation. Some of them seemed to align more with the "no serious harm standard,"

where it might be difficult to be sure that no serious harms will ever occur (Wendler 2005). Others overlapped with the "reasonableness standard," asking what a reasonable person would do in a particular context (Fernandez Lynch 2020). Notably, the American Political Science Association published a guideline (not found in our search process) which sometimes allowed for deception and covert research in studies that pose more than minimal risk "when conducting research with powerful parties, including some public officials, other actors, institutions, and corporations" (APSA 2020, 3).

The assessment of the deception component was separated from that of the overall study risks in several guidelines, providing a threshold for acceptable risks due to the deception itself or due to disguising certain content. A few of these documents also did not mention a low risk threshold for the overall study risk. This is in line with Wendler (2020)'s proposal, who argued for a requirement of the risks not being more than minimal for only those study aspects of which the deception is a part, as long as participants are accurately informed about study parts that pose greater than minimal risk.

Contrary to the thresholds for acceptable risks, thresholds for the sufficiency of the study value were significantly less specific. Generally, documents required the study to lead to significant or important advances. In combination with a lack of consensus on what "social value" means, these thresholds leave a lot of room for subjective interpretation which can for instance be influenced by personal expertise and values of the ethics reviewers and researchers (Clarke 1999; Jordan and Gray 2018). A few guidelines also pointed more specifically towards the possible justification of covert research for gaining access to those communities or behaviors that are otherwise very difficult to reach (e.g., harmful, violent or illegal activities) or to bypass the authority of

those in powerful positions. In the academic discourse, some authors seem to support this practice by arguing that people in powerful positions can otherwise attempt to influence the research process and outcomes, and that powerful organizations can try to hide damaging activities (Alvesalo-Kuusi and Whyte 2018). While for the level of risks, guidelines also defined thresholds for the acceptability of deception itself, the value of deception is only defined relative to non-deceptive alternatives. Nevertheless, irrespective of any alternatives, it might be fruitful to strive for a sufficiently convincing deception so as to be more certain of the reliability of the study results (Olson and Raz 2021; Galang 2018). However, more effective and elaborate deception may also lead to relatively more risk to participants (Olson and Raz 2021). Also, there is no consensus on how to assess post-experimentally whether a deception was in fact convincing (Blackhart et al. 2012; Chester and Lasko 2021).

The analyzed documents seem to require that the benefits of a deceptive study outweigh its risks. However, the separate judgements of sufficient benefit and acceptable risk usually do not appear to influence each other within these guidelines, as they differ in focus and nature. It might be interesting to investigate whether direct personal benefits for the participants may loosen the threshold of acceptable risks or vice versa. The analyzed documents also aligned with the academic literature on the importance of a more positive risk-benefit balance for vulnerable participants and of attaching sufficient importance to participant risks so that these are not snowed under by the indirect benefits to many more people (Parker and Crabtree 2014; Smith, Kimmel, and Klein 2009; Kemmelmeier 2003; Clarke 1999).

Guidelines usually require the deception to be more effective at reaching the study goals than alternative non-deceptive methods, the latter therefore being *impracticable*. This could be further specified as being too difficult or burdensome to

execute (i.e., requiring excessive resources), or insufficient to reach the desired study goals (e.g., due to a sampling bias or biased participant behavior) (Laurijssen et al. 2022). A caveat here is that sometimes the risk for biased participant behavior may be overestimated (Hallegatte and Ertz 2020). Besides these two types of impracticability of the non-deceptive alternatives, guidelines barely mentioned that the non-deceptive alternative could also lead to additional harms to the participants (Laurijssen et al. 2022). It is therefore that, for instance, research on actual aggressive behavior in the laboratory often induces aggression by using deception instead of encouraging a real fight (Sieber 1982; Parrott, Miller, and Hudepohl 2015). Guidelines also do not mention how to practically fulfill this requirement of the deceptive method being more acceptable than the non-deceptive alternative(s). Likewise, there has been very limited discussion on this topic in the academic literature. For instance, some have suggested proving the impracticability of the non-deceptive alternatives through showing prior research results to the ethics reviewers (Hertwig and Ortmann 2008b). Others have advised removing only those aspects of the deception for which the alternative is not impracticable (Bischof et al. 2021).

Guidelines usually assigned the ethics review only to the RECs and some mentioned a potential exemption to their assessment may when a study is approved by law. An example was a correspondence study on elected officials, which was exempt from IRB review in the United States by the federal research ethics guidelines (Dynes, Hassell, and Miles 2022).

Based on our work, we have identified several promising areas for future research. On the one hand, developing a more coherent normative framework for the acceptability assessment of individual studies that use deception is an important endeavor. More work is needed to reach a consensus about which thresholds are the

most opportune for this kind of research, as well as getting a better insight into other factors that influence a variable assessment of acceptability (e.g., risk averseness, the theoretical basis of the research question and research participants' psychology, cultural value differences). On the other hand, further empirical work may look into whether how deception is conceptualized, in which research paradigms and areas it is used, with which participant populations and for which purposes may also have an influence on the acceptability assessments. We aim to interview stakeholders in order to explore these latter questions. For now, we believe that the best approach to ethics review of research that uses deception is to start with the general four-step procedure as outlined above: i) assessment of specific risks and benefits, ii) assessment of the acceptability of the aggregated risks and the sufficiency of the aggregated benefits, iii) integration of these acceptability and sufficiency assessments into a risk-benefit balance, and iv) comparison of this balance with the acceptability of any potential alternative non-deceptive methods. This procedure can then be informed by the specific risks and benefits that may be described in the academic literature about the specific deception paradigm of the study at hand (e.g., mystery shopping).

Limitations

Our study had several limitations. These applied to the general methodology used and therefore overlap with our paper on informed consent and debriefing the studies that use deception. An outline of the limitations can be found in Supplemental File 1.

Conclusion

Assessing the ethical acceptability of individual research studies that deceive participants is not an easy task. While academic literature remains scarce and scattered on most of this process' components, our extensive systematic review of normative

guidance documents brings to light a rich and varied set of approaches. Nevertheless, the two complement each other, with the academic literature being more elaborate on the specific risks and benefits of deception, and our guideline analysis revealing a more substantial description of the rest of the assessment process. Gaps remain in the details of defining acceptability thresholds, integrating risks and benefit evaluations and comparing them to those of alternative non-deceptive methods. Also, some topics are unaddressed more generally, such as taking into account the risks of the alternative methods, setting thresholds for the intrinsic value of the deception itself and understanding the factors that influence our value assessments concerning this research method. Future work that shines a light on these areas may well advance the ethical implementation of this prevalent research technique.

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The authors report there are no competing interests to declare.

Data availability statement

All the data comes from publicly accessible documents, for which the references can be found in Table 1.

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Table 1 – Included documents.

Ref.	Title of the Document	Organization	Year
1	International Ethical Guidelines for Research Involving Humans	*Council for International Organizations of Medical Sciences (CIOMS) *World Health Organization (WHO)	*2016*
2	International Ethical Guidelines for Epidemiological Studies	*CIOMS *WHO	2009
3	Ethical Issues in Patient Safety Research: Interpreting Existing Guidance	WHO	2013
4	Code of Ethics	International Sociological Association	2001
5	Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans	*Canadian Institutes of Health Research *Natural Sciences - Engineering Research Council of Canada *Social Sciences and Humanities Research Council	2018
6	Canadian Code of Ethics for Psychologists: Fourth Edition	Canadian Psychological Association	2017
7	Code of Professional Ethics	Canadian Sociology and Anthropology Association	2021
8	Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research	Department of Health, Education, and Welfare (USA)	1979
9	Protection of Human Subjects in Research Supported by USAID	United States Agency for International Development	2015
10	Code of Ethics	American Sociological Association	2018
11	Ethical Principles of Psychologists and Code of Conduct	American Psychological Association	2017
12	The Code of Professional Ethics and Practices	American Association for Public Opinion Research (AAPOR)	2020
13	Protection of Human Participants in Survey Research: A Source Document for Institutional Review Boards	AAPOR	2005
14	Code of Ethics	American Educational Research Association	2011
15	Ethical Guidelines for Social Science Research in	National Committee for Ethics in Social	2000

	Health	Science Research in Health (India)	
16	An EU Code of Ethics for Socio-Economic Research	RESPECT Project	2004
17	Meta-Code of Ethics	European Federation of Psychologists' Associations	2005
18	International Code on Market and Social Research	*European Society for Opinion and Marketing Research (ESOMAR) *International Chamber of Commerce (ICC)	2007
19	Guidelines on Mystery Shopping Studies	ESOMAR	2005
20	Guideline on Conducting Marketing and Opinion Research Using the Internet	ESOMAR	2005
21	Opinion no. 36 of 11 September 2006 on the Ethical Testing of Research in Certain Branches of the Life Sciences	Belgian Advisory Committee on Bioethics	2006
22	Ethical Principles of Research in the Humanities and Social and Behavioural Sciences and Proposals for Ethical Review	National Advisory Board on Research Ethics (Finland)	2009
23	The Ethical Principles of Research with Human Participants and Ethical Review in the Human Sciences in Finland	Finnish National Board on Research Integrity	2019
24	Opinion on the Ethics of Research in the Sciences of Human Behaviour	National Consultative Ethics Committee for Health and Life Sciences (CCNE, France)	1993
25	National Consent Policy	Department of Health, Health Service Executive (Ireland)	2022
26	Code of Ethics for Research in the Social and Behavioural Sciences involving Human Participants	National Ethics Council for Social and Behavioural Sciences (Netherlands)	2018
27	Guidelines for Research Ethics in the Social Sciences, Humanities, Law and Theology	National Committee for Research Ethics in the Social Sciences and the Humanities (NESH, Norway)	2019
28	Research Ethics Guidance	Economic and Social Research Council (UK)	2022
29	Good Practice in Research: Internet-mediated Research	UK Research Integrity Office	2016

30	Statement of Ethical Practice	British Sociological Association	2017
31	Guidelines for Research with Children and Young People	Market Research Society (MRS, UK)	2014
32	Guidelines for Online Research	MRS	2014
33	Conducting Mystery Shopping	MRS	2020
34	Guidelines for Questionnaire Design	MRS	2014
35	Responsibilities of Interviewers	MRS	2014
36	Research Ethics Guidance	Social Research Association (UK)	2021
37	Ethical Guidelines for Educational Research	British Educational Research Association	2018
38	Recommendations on Good Practice in Applied Linguistics	The British Association of Applied Linguistics	2021
39	Statement of Ethics	British Society of Criminology	2015
40	National Statement on Ethical Conduct in Human Research	*National Health and Medical Research Council (Australia) *Australian Research Council *Universities Australia	2018
41	Australian Privacy Principles Guidelines	Office of the Australian Information Commissioner	2019
42	National Ethical Guidelines For Biomedical and Health Research Involving Human Participants	Indian Council of Medical Research	2017
43	National Ethical Guidelines for Health Research in Nepal and Standard Operating Procedure	Nepal Health Research Council	2019
44	Research Ethics Guidelines	Health Research Council of New Zealand	2021
45	Ethical Guidelines for Observational Studies: Observational Research, Audits and Related Activities	National Ethics Advisory Committee (NEAC, New Zealand)	2012
46	Ethical Guidelines for Intervention Studies	NEAC	2012
47	Code of Ethics	The Association of Social Science Research (New Zealand)	1996
48	Code of Ethics for Psychologists Working in Aotearoa/New Zealand	*The New Zealand Psychological Society *The New Zealand Psychologists Board	2012

		*The New Zealand College of Clinical Psychologists	
49	National Ethical Guidelines for Health and Health-Related Research	*Philippine National Health Research System *Philippine Health Research Ethics Board	2017
50	Ethics Guidelines for Human Biomedical Research	Bioethics Advisory Committee (Singapore)	2021
51	Guidelines for Ethical Conduct of Research Involving Human Subjects	National Ministry of Health, Directorate of Health Research (Sudan)	2008
52	National Research Ethics Review Guideline	Ministry of Science and Technology (Ethiopia)	2014
53	The Framework of Guidelines for Research in the Social Sciences and Humanities in Malawi	National Commission for Science and Technology (Malawi)	2011
54	Ethics in Health Research: Principles, Structures, and Processes	Department of Health (South Africa)	2015
55	Code of Ethics for the Psychologist Europeo	Colegio Oficial de Psicólogos (Spain)	1993

Table 2 - Acceptability thresholds of the relevant study components as described in the guidelines. Thresholds are categorized based on whether they refer to a threshold for the acceptability of risk or study value, and whether they refer to the entire study, the deceptive part of the methodology or the alternative non-deceptive method. For each identified threshold, the corresponding guidelines are mentioned. When definitions were found for the thresholds, this is also stated (more detailed descriptions of the definitions can be found in the main text).

	Assessed study component	**Thresholds**	**Definitions of thresholds**
Risks	*Entire study*		
	Risk of general harm	*Less than minimal risk*	
		*No risk[6,22,23,33,45]	
		*Less than minimal risk[42,43]	
		Minimal risk[1,3,5,10,14,19,42,46,49,51]	Minimal risk: various definitions
		Unspecified low risk	Unspecified low risk: identified definitions limited
		*Minimizable or minimized risk[2,6,7,19,49]	
		*Low risk[3,40]	
		*No reasonably predictable (serious) risk[6,7,11,49]	
		*Adequate respect for human dignity[27]	
	Risk of specific kinds of harm		
	Deceptive method		
	Disguised risk	*Less than minimal risk*	
		*No risk[20]	
		Minimal risk[2,8,54]	
		Unspecified low risk	
		*No reasonably predictable harm[26]	
	Posing intrinsic risk	*Less than minimal risk*	
		*No adverse effect on participants' rights and/or welfare[5,20,42,43,49]	
		Minimal risk[3,8,40]	

		Unspecified low risk *No reasonably predictable harm[5,24,40] *Other* *No long-term harm to any participant[55]	
	Alternative non-deceptive method	*No recommendations*	
Value/benefits	*Entire study*	*Exceptional importance[39] *Greater benefit[36] *Real and substantial benefit[25] *Significant or important advances[1-3,11,26,28,42,54] *Valuable goal[24,45] *Value justifies study[10,14,27,49]	*Spectrum of adjectives; no definitions*
	Deceptive method	*No recommendations*	
	Alternative non-deceptive method	*General* *Impracticable, impossible or unfeasible[1,2,3,10,11,14,22,25,26,30,40,42,49,51] *Overly demanding* *Overly demanding to execute[5,9,28] *More than inconvenient to execute[5,9,25] *Insufficient quality of results* *Insufficient to reach adequate study results[3,5,8,9,25,28,41,49,54] *More than inconvenient to reach study results[8,9]	Impracticability: a few different definitions