BMJ Global Health

A systematic review on ethical challenges of 'field' research in low-income and middle-income countries: respect, justice and beneficence for research staff?

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ABSTRACT

Introduction Primary data collection in low-income and middle-income countries (LMICs) is associated with a range of ethical complexities. Considerations on how to adequately ensure the well-being of research staff are largely neglected in contemporary ethics discourse. This systematic review aims to identify the ethical challenges that research staff across different hierarchical levels and scientific disciplines face when conducting research in LMICs.

Methods We searched 13 electronic databases and handsearched publications in six selected journals as well as the reference lists of all included studies. No restrictions were applied with respect to the publication date, research design, and target population.

Results 23 151 studies were retrieved, 183 of which met our inclusion criteria. We identified nine different types of ethical challenges that research staff may be exposed to during field research, including (1) role conflicts that can emerge from participants' help requests and the high level of deprivation found in certain study settings, (2) feelings of guilt and (3) detrimental mental health impacts. Further challenges were (4) sexual harassment (5) safety risks and (6) political repression, particularly in postconflict, disaster-ridden or autocratic study contexts. Additionally, studies reported (7) inadequate working conditions and (8) power imbalances within research teams, while (9) ethics boards were found to be ill equipped to anticipate and address emerging risks, thus increasing the ethical liability of researchers.

Conclusion This review revealed several complex ethical challenges that research staff may face during data collection. In order to achieve the Sustainable Development Goal 8.8 on 'safe and secure working environments' and to protect research staff from harm, amendments must urgently be made to current ethical standards.

PROSPERO registration number CRD42019131013

Key questions

What is already known?
► Six existing non-systematic reviews discuss selected ethical challenges that affect research staff during data collection endeavours in low-income and middle-income countries (LMICs).
► None of the existing reviews presented a comprehensive overview of ethical challenges or outlined safeguarding mechanisms for research staff.

What are the new findings?
► This is the first systematic review to date that sheds light on the various ethical challenges presented to research staff during data collection in LMICs.
► Data collection in LMICs can carry harmful consequences for the involved research staff, including threats to their physical and emotional well-being and intricate role conflicts.
► Further challenges comprise precarious employment conditions, inadequate remuneration, intellectual exploitation and feelings of guilt and shame that could arise due to vast socioeconomic disparities between researchers and the study population.

What do the new findings imply?
► Formalised ethical guidelines for the adequate protection of research staff as well as institutionalised support structures for data collection projects in LMICs are urgently needed.
► Individual scholars, academic institutions and funding bodies implementing research projects in LMICs need to ensure the integrity and well-being of research staff alongside that of study participants.

INTRODUCTION

The importance of research ethics was tragically recognised in the wake of World War II and in light of the inhumane medical experimentations undertaken in Germany during the Nazi era.[1] In consequence, the Nuremberg Code (1947) and later the World Medical Association's Declarations of Geneva (1948) and of Helsinki (1964) were developed to form the ethical cornerstones of biomedical

research.[2] In subsequent years, research ethics gained in importance in other scientific disciplines, fuelled by criticism directed at morally reprehensible research studies such as the Tuskegee Syphilis study,[3] the Stanford-Prison experiment[4] and the Tearoom Trade study.[5 6] In reaction to these studies, the Belmont Report was drafted in 1978, outlining the three fundamental principles of respect, justice and beneficence that guide human subject research until today.[7]

Up to now, the application of these principles has predominantly centred around protecting the well-being of study participants. This includes critical reflections on procedures of informed consent, anonymity and confidentiality concerns, and on the potential exploitation or coercion of study participants.[8–10] In contrast, ensuring the protection of research staff has played a less dominant role in contemporary ethical discourse,[11] even though their well-being is highly relevant for the ethical integrity of a project as a whole and for their interactions with research participants in particular.[12]

A specific variant of human subject research involves collection of primary qualitative or quantitative data—often referred to as 'field research'—in low-income and middle-income countries (LMICs). Large-scale data generation, including empirical data from LMICs, has gained prominence in the past decades spurred by the 'evidence revolution' that cuts across disciplines and that is linked to the rise of impact evaluations.[13 14] While the quest for more evidence may be justified by the ultimate goal to improve the living conditions of research subjects, the required data collection in LMICs often takes place in settings marked by extreme poverty, political instability and highly vulnerable study participants.[15 16] The ethical complexities of research projects are likely more pronounced in these contexts. However, systematic knowledge on the ethical challenges that are experienced by research staff and on how these are shaped by local contextual factors and institutional frames is currently lacking.[11]

In light of this gap in existing research, this systematic review aims to identify the range of ethical challenges that research staff faces when conducting research in LMICs. The review is broad in scope, capturing the experiences of research staff at different hierarchical levels and assessing research projects implemented across disciplines and world regions.

METHODS
Search strategy and selection criteria
We conducted a systematic review in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and a preregistered protocol to identify reports and studies of ethical challenges that research staff may encounter when conducting research projects. We did not apply any restrictions to the research design, disciplinary focus and target population of identified research projects. We excluded studies that solely focused on ethical challenges pertaining to research participants.

We searched Web of Science, PsycINFO, Scopus, Global Health, EconLit, WHO Regional Office for Africa Library, 3ie Impact Evaluation Repository, DFID's Research4Development, USAID Development Experience Clearing House, African Development Bank Evaluation Reports, Joint Libraries of World Bank and IMF (JOLIS), British Library of Development Studies and the Institute of Development Studies' ELDIS in September 2019. We further handsearched the Journal of Development Studies, Journal of Development Economics, Journal of Development Effectiveness, Journal of Peace Research, BMJ Global Health and Lancet Global Health and checked the reference lists of all included papers for additional relevant works.

We used English search terms only and set up the search string to reflect a broad range of anticipated ethical challenges. We further applied the Campbell Collaboration's LMICs filter to restrict the scope to research projects carried out in LMICs. No restrictions were applied with regards to publication dates. The search string is provided in online supplemental table S1.

After eliminating duplicates, titles and abstracts were screened by DAN, JS, LK and JK. A subset of 10% of the identified records was double-screened and inter-rater reliability exceeded 90%. In addition, all records that were marked as 'unclear' by one reviewer were triple screened and any disagreements were resolved through group consensus.
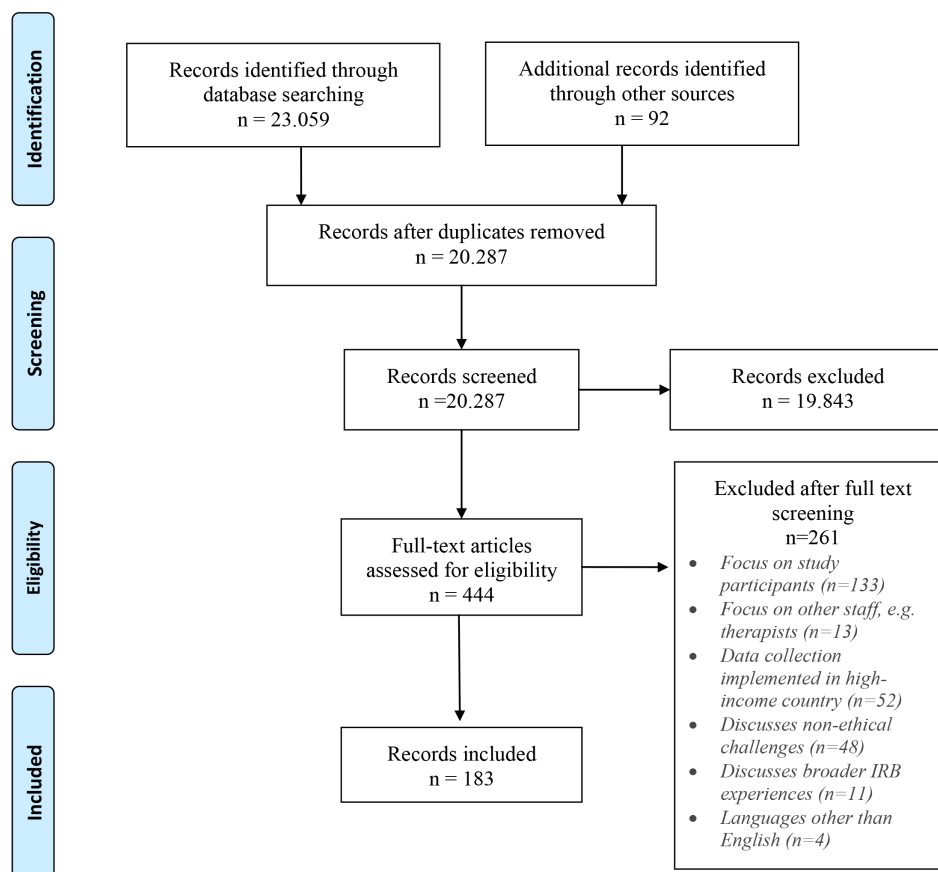
Data analysis
Data from included studies were entered into a piloted data extraction form to capture relevant information from included full text studies on (1) disciplinary focus/research field, (2) setting and context of the field research project, (3) applied methodology (eg, empirical vs theoretical), (4) ethical challenges reported and (5) category of research personnel affected by these ethical challenges. We categorised research staff by hierarchical position (ie, principal investigators (PIs), PhD students, research assistants (RAs) and data collectors) and by their country of origin, thus differentiating between research staff native to the study setting (hereafter referred to as 'local') and research staff from a foreign country (hereafter referred to as 'non-local').

We used thematic analysis to identify nine broad categories of ethical challenges. Thematic analysis was carried out independently by each author, subsequently reviewed by another review author, and flagged ambiguities were resolved by full group consent. Conducting a quantitative meta-analysis was not deemed appropriate, given that the large majority of included studies were based on qualitative and ethnographic work. In addition, given the considerable heterogeneity found with regard to the methodology of included studies, we did not carry out a formal risk of bias assessment.

PRISMA 2009 Flow Diagram

Figure 1 Study selection. IRB, institutional review boards.

Patient and public involvement

We conducted formative discussions with researchers who were involved in primary data collection in LMICs and represented diverse disciplines, hierarchies and nationalities. In these conversations, the frequency of ethical challenges occurring during 'field' research was reiterated and the urgent need for standardised guidelines on how to protect research staff was emphasised. We intend to present and disseminate our findings to ethics boards, research institutes (eg, Innovation for Poverty Action), and research teams who collect data in LMICs.
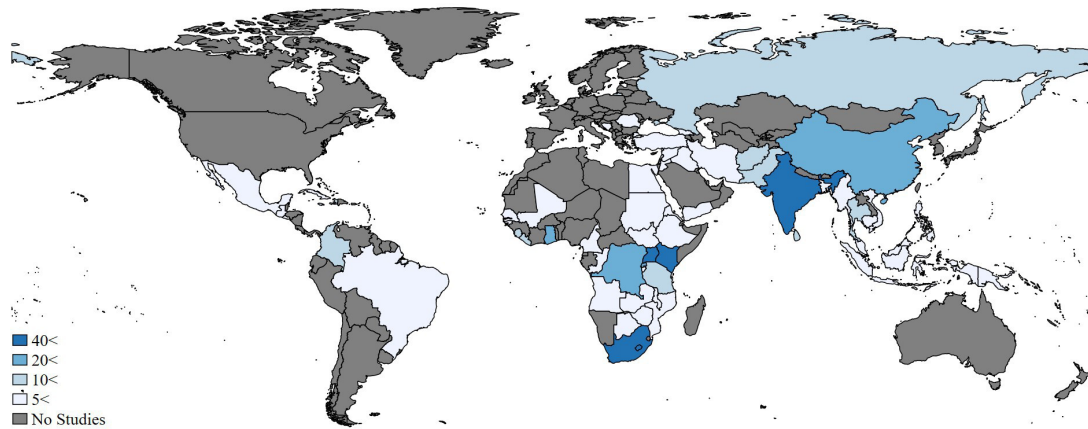
RESULTS

Our database search returned 23 059 records and we retrieved 92 additional studies from other sources. We assessed 444 full-text articles, of which 183 met our inclusion criteria (figure 1).

Included studies were implemented across 61 LMICs. Forty-five per cent of the studies were conducted in Africa, 25% in Asia, 10% in Latin and South America, 6% in the Middle East and 4% were carried out in Europe. Meanwhile, the remaining studies adopted a more global perspective, reporting on challenges to data collection in general (figure 2).

Of 183, 19 (10%) included studies presented a purely normative and theoretical analysis of ethical challenges, while all other studies were based on empirical data and reports. More specifically, 119/183 (65%) studies were based on autoethnographic field reports, 16/183 (9%) studies analysed data captured in field journals, 24/183 (13%) studies included data from qualitative interviews, 6/183 (3%) studies reported on results from focus group discussions, and only 4/183 (2%) studies employed quantitative surveys. Ethically challenging situations affected research staff at different hierarchical levels: the majority of studies addressed those affecting PIs (95/183, 52%, whereas only 15/183, 8% involved local PIs), 27/183 (15%) studies focused on non-local PhD students and 13/183 (7%) on local PhD students. Of 183, 22 (12%) studies discussed challenges faced by local data collectors and 25/183 (14%) highlighted issues for other local research staff. In terms of scientific discipline, 56/183 (31%) studies were published in health science, 29/183 (16%) in political science (including conflict studies), 17/183 (9%) in development studies/development

Figure 2 Geographical distribution of included studies.

economics, while the remaining papers were published in other disciplines or in explicitly interdisciplinary social science journals (see table 1).

Role conflicts

The most frequently cited challenge related to *role* conflicts, cited in 95/183 (52%) studies (see figure 3). Several included studies, particularly from anthropological and ethnological disciplines, presented detailed reflections on researchers' positionality and on the difficult trade-offs between feeling empathy for fellow human beings and exhibiting the level of detachment appropriate in their positions as objective researchers.[17 18] When data collection is carried out in highly deprived settings, research participants may seek support from research staff.[19–22] Here, included studies pointed to cases of participants asking for food,[23–25] medical treatment,[26 27] financial support[25 28 29] or simply seeking to establish a form of friendship with the research staff.[26 28 30] Two studies discussed occasions in which non-local researchers were beseeched to adopt participants' children.[31 32] In light of this, research staff may feel a moral obligation to take on additional roles beyond the scope of their research, for instance by essentially acting in the role of social or aid workers, advocates or counsellors.[26 32–35] This mechanism is likely amplified when the study targets vulnerable populations such as orphans or survivors of natural disasters, wars and violence.[36 37] Participatory research forms may be most prone to provoking such role conflicts due to the greater emotional proximity between participants and researchers. The perceived need for researchers to take on additional responsibilities beyond their immediate research project is also likely increased in settings marked by heavily under-resourced and understaffed service infrastructure, in which material and emotional support and help can thus not be effectively referred on to external professionals.[38] More importantly, if in the process of a research study, participants disclose information that flags them as being at acute, life-threatening risk, research staff may be faced with a highly complex ethical trade-off between violating the principle of participant confidentiality on the one hand and a moral obligation

to protect them from harm on the other hand.[39–41] Role and positionality conflicts often continue to exist beyond the duration of the project, when research staff members feel obliged to keep providing some form of support to participants, who in turn continue to reach out to them.[30 42]

Feelings of guilt

In contrast to the externally projected roles discussed above, 40/183 (22%) studies noted that research staff can also internalise feelings of guilt and cast doubts on the legitimacy of the research project as a whole. Related to the difficulties cited above with regard to spelling out clearly defined boundaries for the roles and responsibilities taken on by researchers, data collection can call into question fundamental considerations of reciprocity and responsibility.[40 43 44] That is, while research participants invest their time to take part in the study and disclose detailed information during interviews, researchers may feel unable to substantially improve participants' lives.[45–48] Included studies presented narratives on how the inability to 'give something back' to participants can evoke feelings of 'tremendous guilt',[49] 'helplessness',[46] and that members of the research staff may 'question the purpose of (their) work as a researcher'.[50] Guilt and shame are more likely internalised if large structural inequalities exist between research participants and researchers. These dynamics were particularly pronounced in studies carried out in disaster and humanitarian contexts.[18 51 52] Some studies also question the legitimacy of Western researchers who 'speak for the third world',[53] which directly ties into the aspect of power dynamics discussed below.

Emotional distress and poor mental health

Another ethical challenge that 50/183 (27%) included studies referred to was emotional distress. This predominantly occurred in research projects implemented in disaster settings or fragile and conflict-affected countries, and in projects targeting survivors of sexual and physical violence. For instance, in one included study, carried out in a camp for displaced persons, research staff witnessed

Table 1 Characteristics of included studies

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Abimanyi-Ochom (2017)	Heath Sciences	Uganda	PhD (non-local/ local), RAsRAs (gate keepers…) (local), Data Collectors	Field Journal/Field Notes	Political repression/ persecution, Threat to physical well-being/safety
Alderman et al (2013)	Development Studies	Various	PI (non-local)	Autoethnographic	Role conflict/Positionality
Augustin (2018)[45]	Political Science	Yemen	PhD (non-local/local)	Autoethnographic	Threat to physical well-being/safety, Doubts about purpose/legitimacy of research/guilt
Azungha (2019)	Business/Management Studies	Ghana	PhD (non-local)	Autoethnographic	Threat to physical well-being/safety, Threat to emotional well-being/mental health, Poor employment/ work conditions
Baaz (2019)	Political Sciences	DRC	PI (non-local)	Autoethnographic	Sexual harassment/gender discrimination, Threat to physical well-being/safety, Role conflicts
Bachmann (2011)[18]	Geography/Agricultural Science/Environmental Science	Kenya	PI (non-local)	Autoethnographic	Role conflicts, Threat to physical well-being/safety, Doubts about purpose/ legitimacy of research/guilt
Bailey (1988)	Sociology	Global	Not explicitly specified	Theoretical	Unequal power dynamics, Limits of IRBs/moral relativism
Baird (2009)	Political Science	Colombia	PhD (non-local)	Autoethnographic	Threat to physical well-being/safety
Baird[102] (2018)	Other Social Sciences/ Interdisciplinary	Colombia	PhD (non-local)	Autoethnographic, Field Journal/ Field Notes	Threat to physical well-being/safety, Threat to emotional well-being/mental health, Poor employment/ work conditions, Doubts about purpose/legitimacy of research/guilt
Bell (2013)	Other Social Sciences/ Interdisciplinary	Cuba	PI (non-local)		Unequal power dynamics, Poor employment/work conditions
Belousov et al (2007)[68]	Other Social Sciences/ Interdisciplinary	Russia	PI (non-local)	Autoethnographic	Threat to physical well-being/safety, Political repression/persecution
Belur (2014)[17]	Other Social Sciences/ Interdisciplinary	India	PI (non-local)	Autoethnographic	Threat to physical well-being/safety, Role conflicts, Sexual harassment/gender discrimination
Berghs (2010)[43]	Heath Sciences	Sierra Leone	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Doubts about purpose/legitimacy of research/guilt
Bonsu et al (2017)	Heath Sciences	Botswana	PI (non-local), RAs (non-local), RAs (gate keepers…) (local)	Autoethnographic	Poor employment/work conditions
Bradfield (2012)	Heath Sciences	Global	PI (non-local)	Autoethnographic	Role conflicts, Unequal power dynamics
Brewis (2014)	Business/Management Studies		PI (non-local)	Autoethnographic	Doubts about purpose/ legitimacy of research/guilt
Broad and Reyes (2008)	Other Social Sciences/ Interdisciplinary	Colombia	PI (non-local)	Autoethnographic	Doubts about purpose/ legitimacy of research/guilt, Threat to physical well-being/safety
Browne and Moffett (2014)[42]	Political Sciences	Uganda, Palestine	PhD (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Threat to physical well-being/ safety, Role conflicts
Burke et al (2019)	Health Sciences	Senegal	RAs (gate keepers…) (local)	Autoethnographic	Threat to emotional well-being/mental health

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Calgaro (2015)[46]	Other Social Sciences/Interdisciplinary	Thailand	PhD (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Doubts about purpose/legitimacy of research/guilt
Campbell (2017)	Political Science	Various	PI (non-local)	Normative/Theoretical	Threat to emotional well-being/mental health, Threat to physical well-being/safety, Role conflicts, Limits of IRBs/moral relativism, Political repression/persecution, Doubts about purpose/legitimacy of research/guilt
Canavati et al (2017)[26]	Heath Sciences	Cambodia	Data Collectors	Field Journal/Field Notes	Threat to physical well-being/safety, Poor employment/work conditions, Role conflicts
Caretta (2015)	Other Social Sciences/Interdisciplinary	Kenya, Tanzania	PI (non-local)	Field Journal/Field Notes	Unequal power dynamics, Sexual harassment/gender discrimination, Role conflicts
Casale et al (2011)[12]	Health Sciences	South Africa	Not explicitly specified	Field Journal/Field Notes	Role conflicts
Castillo (2015)[67]	Anthropology/Ethnology	Philippines	PI (non-local)	Autoethnographic	Threat to physical well-being/safety, Threat to emotional well-being/mental health
Chaitin (2003)[70]	Heath Sciences	Israel, Palestine	Not explicitly specified	Autoethnographic	Threat to physical well-being/safety
Chiumento et al (2018)	Other Social Sciences/Interdisciplinary	South Asia	PI (non-local)	Autoethnographic	Poor employment/work conditions, Doubts about purpose/legitimacy of research/guilt
Coles et al (2014)[44]	Other Social Science/Interdisciplinary	South Africa, South America	PI (non-local)	Qualitative Interview	Doubts about purpose/legitimacy of research/guilt, Threat to emotional well-being/mental health, Threat to physical well-being/safety, Role conflicts
Crabtree (2019)	Development Studies	Papua New Guinea	PI (non-local)	Autoethnographic	Role conflicts
Cronin-Furman and Lake (2018)[15]	Other Social Sciences/Interdisciplinary	Various	PI (non-local), RAs (gate keepers…) (local), Data Collectors	Autoethnographic	Threat to physical well-being/safety, Poor employment/work conditions, Unequal power dynamics
Davison et al (2013)	Heath Sciences	Jamaica	RAs (gate keepers…) (local)	Field Journal/Field Notes	Role conflicts, Doubts about purpose/legitimacy of research/guilt
Dayal et al (2018)	Heath Sciences	India	Not explicitly specified	Literature Review	Threat to physical well-being/safety, Threat to emotional well-being/mental health
Derry and Baum (1994)[58]	Psychology	Various	RAs (non-local)	Other	Role conflicts, Threat to emotional well-being/mental health, Sexual harassment/gender discrimination
Dixit (2012)	Political Sciences	Various	PhD (local)	Autoethnographic	Role conflicts
Dodsworth (2019)[72]	Political Science	various	Not explicitly specified		Unequal power dynamics
Doherty et al (2018)	Health Sciences	Global	PI (non-local)	Theoretical	Unequal power dynamics, Role conflicts
Dominey-Howes (2015)[47]	Other Social Sciences/Interdisciplinary	Various	PI (non-local), PhD (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Role conflicts, Doubts about purpose/legitimacy of research/guilt, Unequal power dynamics
D'Souza et al (2018)	Heath Sciences	Jamaica	PI (non-local), PI (local)	Autoethnographic	Role conflicts

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Einarsdóttir (2006)	Anthropology/Ethnology	Guinea Bissau	PI (non-local)	Autoethnographic	Role conflicts
Ellsberg and Potts (2018)	Health Sciences	Global	RAs (gate keepers…) (local)	Review of guidelines	Threat to physical well-being/safety, Threat to emotional well-being/mental health
Fidalgo et al (2017)	Heath Sciences	Brazil	Data Collectors	Autoethnographic	Poor employment/work conditions
Francis and Hemson (2009)	Heath Sciences	South Africa	Data Collectors	Focus group	Role conflicts, Poor employment/work conditions, Threat to emotional well-being/mental health
Fuchs et al (2019)	Business/Management Studies	China	PhD (non-local)	Qualitative and quantitative document/law review	Threat to physical well-being/safety, Political repression/persecution
George (2015)	Political Science	India	PhD (non-local)	Autoethnographic	Role conflicts
Gerharz (2017)[34]	Sociology	Sri Lanka	PI (non-local)	Autoethnographic	Role conflicts, Threat to physical well-being/safety, Poor employment/work conditions
Gheondea-Eladi (2017)[40]	Health Sciences	Romania	PI (local)	Autoethnographic	Limits of IRBs/moral relativism, Doubts about purpose/legitimacy of research/guilt, Poor employment/work conditions, Role conflicts
Gilmore (2019)	Health Sciences	Tanzania, Uganda, Kenya	Not explicitly specified	Autoethnographic	Unequal power dynamics, Sexual harassment/gender discrimination
Girei (2017)	Business/Management Studies	Uganda	PI (non-local)	Autoethnographic	Role conflicts, Unequal power dynamics
Glasius et al (2018)	Political Science	Various	PI (non-local), PI (local), PhD (non-local), PhD (local)	Autoethnographic	Political repression/persecution, Threat to physical well-being/safety, Doubts about purpose/legitimacy of research/guilt, Threat to emotional well-being/mental health
Glennerster and Powers (2013)	Development Studies	Global	Not explicitly specified	Theoretical	Role conflicts, Doubts about purpose/legitimacy of research/guilt
Gokah (2006)[57]	Other Social Sciences/Interdisciplinary	Ghana, Uganda, Ethiopia, South Africa	PhD (non-local)	Autoethnographic	Threat to physical well-being/safety, Threat to emotional well-being/mental health, Role conflicts
Goodhand (2000)	Political Science	Afghanistan, Sri Lanka, Liberia	PI (non-local)	Autoethnographic	Threat to physical well-being/safety, Role conflicts
Gosh (2018)	Geography/Agricultural Science/Environmental Science	India	PI (non-local)	Autoethnographic	Threat to physical well-being/safety
Gouda et al (2016)[63]	Heath Sciences	Papua New Guinea	Data Collectors	Qualitative Interview, Focus group	Threat to emotional well-being/mental health, Role conflicts, Doubts about purpose/legitimacy of research/guilt
Groes-Green (2012)[51]	Anthropology/Ethnology	Mozambique	PI (non-local)	Autoethnographic	Sexual harassment/gender discrimination, Role conflicts, Unequal power dynamics, Doubts about purpose/legitimacy of research/guilt
Grünenfelder (2014)[85]	Sociology	Pakistan	Data Collectors	Qualitative Interview	Sexual harassment/gender discrimination, Threat to physical well-being/safety
Gupta and Kelly (2014)	Other Social Sciences/Interdisciplinary	Various	PI (non-local)	Autoethnographic	Doubts about purpose/legitimacy of research/guilt

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Gurol and Wetterich (2019)	Political Science	China	PhD (non-local)	Autoethnographic	Threat to physical well-being/safety, Threat to emotional well-being/mental health
Hamid (2010)[19]	Other Social Sciences/Interdisciplinary	Bangladesh	PhD (non-local)	Autoethnographic	Limits of IRBs/moral relativism, Role conflicts, Doubts about purpose/legitimacy of research/guilt, Threat to emotional well-being/mental health
Hoffman and Tarawalley (2014)	Anthropology/Ethnology	Liberia, Sierra Leone	PI (non-local), PI (local)	Field Journal/Field Notes	Threat to physical well-being/safety, Unequal power dynamics
Hu (2015)[65]	Political Sciences	China	PI (non-local)	Autoethnographic	Threat to physical well-being/safety, Political repression/persecution, Role conflicts
Huggins and Glebbeek (2009)	Other Social Sciences/Interdisciplinary	Brazil, Guatemala	PI (non-local)	Autoethnographic	Unequal power dynamics, Sexual harassment/gender discrimination, Threat to physical well-being/safety, Threat to emotional well-being/mental health, Doubts about purpose/legitimacy of research/guilt
Jacobsen and Landau (2003)	Political Science	South Africa	PI (non-local)	Autoethnographic	Doubts about purpose/legitimacy of research/guilt, Role conflicts, Threat to physical well-being/safety
Jao et al (2015)	Heath Sciences	Kenya	PI (non-local), PI (local), PhD (non-local), PhD (local), Data Collectors, RAs (gate keepers…) (local)	Qualitative Interview	Role conflicts, Unequal power dynamics
Jayawickrama (2013)[87]	Development Studies	Sri Lanka, Malawi, Sudan, Pakistan	PI (non-local)	Autoethnographic	Poor employment/work conditions, Role conflicts, Unequal power dynamics, Threat to physical well-being/safety, Limits of IRBs/moral relativism
Jessee (2017a)	Sociology	Rwanda	PI (non-local)	Autoethnographic	Unequal power dynamics
Jessee (2017b)	Other Social Sciences/Interdisciplinary	Rwanda	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Unequal power dynamics
Jewkes et al (2000)	Heath Sciences	South Africa, Zimbabwe	PI (non-local), Data Collectors	Autoethnographic	Threat to physical well-being/safety, Sexual harassment/gender discrimination, Threat to emotional well-being/mental health, Role Conflicts
Johnson et al (2014)	Psychology	Global	Not explicitly specified	Literature review	Threat to physical well-being/safety
Jones et al (2013)	Heath Sciences	Uganda	PI (non-local)	Autoethnographic	Role conflicts
Jones et al (2015)	Geography/Agricultural Science/Environmental Science	Various	PI (non-local)	Autoethnographic	Poor employment/work conditions, Political repression/persecution
Kamuya et al (2013)	Heath Sciences	Kenya	RAs (gate keepers…) (local)	Qualitative Interview	Poor employment/work conditions, Role conflicts, Sexual harassment/gender discrimination
Kamuya et al (2014)[24]	Heath Sciences	Kenya	Data Collectors, PI (non-local)	Qualitative Interview	Role conflicts, Poor employment/work conditions
Kamuya et al (2017)[74]	Health Sciences	Kenya	Data Collectors	Autoethnographic	Sexual harassment/gender discrimination, Poor employment/work conditions, Role conflicts

Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Kelley *et al* (2016)	Heath Sciences	South Africa, Uganda, Kenya, Cambodia, Thailand	PI (non-local)	Qualitative Interview	Role conflicts
Khalid (2014)	Development Studies	Pakistan	PhD (local)	Autoethnographic	Poor employment/ work conditions, Sexual harassment/gender discrimination, Role conflicts, Limits of IRBs/ moral relativism, Threat to physical well-being/safety
Kingori (2013)[23]	Heath Sciences	Kenya	Data Collectors	Autoethnographic	Poor employment/work conditions, Doubts about purpose/legitimacy of research/guilt, Threat to emotional well-being/mental health
Kingori and Gerrets (2016)	Heath Sciences	Various	PI (non-local), RAs (gate keepers…) (local)	Qualitative Interview	Role conflicts, Threat to emotional well-being/mental health, Poor employment/ work conditions
Klocker (2015)[56]	Other Social Sciences/ Interdisciplinary	Tanzania	Data Collectors, PhD (non-local/local), RAs (gate keepers…) (local)	Qualitative Interview	Threat to emotional well-being/mental health
Kovats-Bernat (2002)[101]	Anthropology/Ethnology	Haiti	PI (non-local)	Autoethnographic	Threat to physical well-being/safety
Kunnath (2013)[53]	Anthropology/Ethnology	India	PI (local)	Autoethnographic	Doubts about purpose/ legitimacy of research/ guilt, Political repression/ persecution, Threat to emotional well-being/mental health, Threat to physical well-being/safety
Lages *et al* (2015)	Business/Management Studies	Global	PI (non-local)	Other	Poor employment/work conditions
Lake and Parkinson (2017)	Political Science	Various	PhD (non-local)	Theoretical	Threat to physical well-being/safety
Lansford *et al* (2019)[90]	Psychology	Global	Not explicitly specified	Autoethnographic	Unequal power dynamics
Lawhon *et al* (2014)	Geography/Agricultural Science/Environmental Science	South Africa	PhD (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Limits of IRBs/moral relativism, Threat to physical well-being/safety
Leach (2006)	Health Sciences	Various	PI (non-local)	Autoethnographic	Sexual harassment/gender discrimination
Leach and Horne (2018)	Psychology	Russia, Rwanda	PI (non-local)	Focus group	Doubts about purpose/ legitimacy of research/guilt, Role conflicts, Unequal power dynamics, Limits of IRBs/moral relativism
Lombe *et al* (2012)[103]	Social Work	Ghana	Not explicitly specified	Autoethnographic	Unequal power dynamics
Lund (2012)	Other Social Sciences/ Interdisciplinary	Sri Lanka	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Threat to physical well-being/ safety, Doubts about purpose/legitimacy of research/guilt, Role conflicts
Madiega (2013)[25]	Heath Sciences	Kenya	Data Collectors	Qualitative Interview	Role conflicts, Poor employment/work conditions, Threat to emotional well-being/mental health

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Maier and Monahan (2009)[48]	Psychology	Global	PI (non-local), PhD (non-local), RAs (non-local)	Qualitative Interview	Role conflicts, Threat to physical well-being/safety, Doubts about purpose/legitimacy of research/guilt, Threat to emotional well-being/mental health
Makhoul *et al* (2014)[98]	Sociology	Lebanon	PI (non-local)	Qualitative Interview	Unequal power dynamics, Limits of IRBs/moral relativism
Mann (2019)	Political Science	Colombia	PhD (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Threat to physical well-being/safety, Sexual harassment/gender discrimination, Role conflicts
Mannell and Guta (2018)	Heath Sciences	Rwanda	RAs (gate keepers…) (local), PI (non-local)	Autoethnographic	Role conflicts
Marchais (2020)	Other Social Sciences/Interdisciplinary	DRC	PI (non-local), RAs (non-local)	Autoethnographic	Unequal power dynamics, Poor employment/work conditions, Threat to physical well-being/safety
Marchais *et al* (2020)	Political Science	DRC	Not explicitly specified	Autoethnographic	Unequal power dynamics, Role conflicts, Poor employment/work conditions, Threat to physical well-being/safety, Sexual harassment/gender discrimination
Minkler (2004)	Heath Sciences	Global	Not explicitly specified	Theoretical	Unequal power dynamics, Poor employment/work conditions, Role conflicts
Molony and Hammett (2007)[75]	Other Social Sciences/Interdisciplinary	South Africa, Tanzania	PI (non-local), RAs (gate keepers…) (local)	Autoethnographic	Poor employment/work conditions, Unequal power dynamics, Threat to physical well-being/safety, Role conflicts, Sexual harassment/gender discrimination
Molyneux *et al* (2009)	Development Studies	Kenya, South Africa	Data Collectors	Autoethnographic	Role conflicts
Molyneux *et al* (2016)	Health Sciences	Kenya	PI (non-local)	Qualitative Interview, Field Journal	Role conflicts
Moncrieffe (2009)	Development Studies	Jamaica	PI (non-local)	Autoethnographic	Threat to physical well-being/safety
Morrell *et al* (2012)	Sociology	South Africa	PI (non-local), PhD (non-local), RAs (gate keepers…) (local)	Autoethnographic	Role conflicts
Morris (2015)	Other Social Sciences/Interdisciplinary	various	Not explicitly specified	Quantitative Survey, Qualitative Interview, Literature Review	Threat to physical well-being/safety, Poor employment/work conditions
Mosavel[54] *et al* (2011)	Heath Sciences	South Africa	RAs (gate keepers…) (local)	Field Journal	Poor employment/work conditions, Threat to emotional well-being/mental health, Threat to physical well-being/safety, Role conflicts
Moss *et al* (2019)[59]	Psychology	Rwanda, Zanzibar, Sudan, Turkey	Not explicitly specified	Field Journal	Threat to physical well-being/safety, Political repression/persecution, Threat to emotional well-being/mental health
Motlafi (2018)	Political Sciences	South Africa, Rwanda	PI (non-local)	Autoethnographic	Unequal power dynamics

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Mukherji et al (2014)	Geography/Agricultural Science/Environmental Science	Haiti, India	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Role conflicts, Sexual harassment/gender discrimination
Mutaru (2018)	Anthropology/Ethnology	Ghana	PhD (local)	Autoethnographic	Role conflicts, Limits of IRBs/moral relativism, Unequal power dynamics
Muzaila et al (2019)	Political Science	Republic of the Congo	Not explicitly specified	Autoethnographic	Poor employment/work conditions, Unequal power dynamics, Threat to emotional well-being/mental health
Mwambari (2019a)[80]	Other Social Sciences/Interdisciplinary	Uganda	Not explicitly specified	Autoethnographic	Unequal power dynamics, Threat to physical well-being/safety, Sexual harassment/gender discrimination, Poor employment/work conditions, Role conflicts, Political repression/persecution
Mwambari (2019b)[95]	Other Social Sciences/Interdisciplinary	Various	PI (non-local), PI (local)	Autoethnographic	Unequal power dynamics, Threat to physical well-being/safety
Mwambari and Owor (2019)	Development Studies	Uganda, DRC	PI (non-local), PI (local)	Autoethnographic	Unequal power dynamics, Poor employment/work conditions
Nama and Swartz (2002)[21]	Psychology	South Africa	RAs (gate keepers…) (local)	Autoethnographic	Threat to emotional well-being/mental health, Role conflicts
Neto (2019)[71]	Anthropology/Ethnology	Angola, Zambia	RAs (gate keepers…) (local)	Autoethnographic	Political repression/persecution, Threat to physical well-being/safety, Role conflicts, Poor employment/work conditions
Nyenyezi et al. (2020) Editors	Other Social Sciences/Interdisciplinary	DRC	Data Collectors	Autoethnographic	Poor employment/work conditions, Threat to emotional well-being/mental health, Unequal power dynamics, Role conflicts, Sexual harassment/gender discrimination, Political repression/persecution, Threat to physical well-being/safety
O'Mathúna (2009)	Health Sciences	Various	Not explicitly specified	Theoretical	Threat to physical well-being/safety, Threat to emotional well-being/mental health, Political repression/persecution
Orr (2019)	Political Science	Various	Not explicitly specified	Focus group	Sexual harassment/gender discrimination, Political repression/persecution, Threat to physical well-being/safety, Threat to emotional well-being/mental health
Parkes (2010)	Other Social Sciences/Interdisciplinary	South Africa	Not explicitly specified	Autoethnographic	Role conflicts
Parkinson (2019)	Political Sciences	Iraq, Jordan	PI (non-local)	Autoethnographic	Political repression/persecution, Role conflicts, Poor employment/work conditions
Patel et al (2017)	Heath Sciences	India	Enumerators	Content analysis	Role conflicts, Poor employment/work conditions

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Pelcastre-Villafuerte et al (2015)[64]	Heath Sciences	Mexico	PI (non-local), PhD (non-local/local), Data Collectors, RAs (gate keepers…) (local)	Autoethnographic	Threat to physical well-being/safety, Poor employment/work conditions, Doubts about purpose/legitimacy of research/guilt
Peter and Strazzari (2017)	Development Studies	Mali, Senegal	Not explicitly specified	Autoethnographic	Threat to physical well-being/safety, Limits of IRBs/m oral relativism
Pio and Singh (2016)	Development Studies	Various	PI (non-local)	Autoethnographic	Threat to physical well-being/safety, Threat to emotional well-being/mental health
Porter et al (2010)	Psychology	Ghana, Malawi, South Africa	RAs (gate keepers…) (local)	Autoethnographic	Poor employment/work conditions, Unequal power dynamics, Threat to physical well-being/safety, Sexual harassment/gender discrimination
Pyles (2015)	Social Work	Haiti	PI (non-local)	Autoethnographic	Unequal power dynamics, Sexual harassment/gender discrimination, Role conflicts
Raffety (2015)[31]	Anthropology/Ethnology	China	PI (non-local)	Autoethnographic	Role conflicts
Råheim et al (2016)	Heath Sciences	Global	PI (non-local)	Autoethnographic	Unequal power dynamics, Threat to emotional well-being/mental health, Doubts about purpose/legitimacy of research/guilt
Rahmani et al (2015)[20]	Heath Sciences	Iran	PhD (local)	Autoethnographic	Role conflicts
Ralefala et al (2018)	Other Social Sciences/Interdisciplinary	Botswana	PI (local)	Quantitative Survey	Limits of IRBs/moral relativism
Reddy et al (2019)	Development Studies	South Sudan	PI (non-local), RAs (gate keepers…) (local)	Autoethnographic, Qualitative Interview	Threat to emotional well-being/mental health, Role conflicts
Reed (2002)	Political Science	Liberia, Thailand, Burma	Not explicitly specified	Autoethnographic	Threat to emotional well-being/mental health, Limits of IRBs/moral relativism, Threat to physical well-being/safety
Ridde et al (2019)	Heath Sciences	Global	PI (non-local)	Other	Unequal power dynamics, Sexual harassment/gender discrimination
Roberts et al (2019)[39]	Heath Sciences	South Africa	Data Collectors	Qualitative Interview	Threat to physical well-being/safety, Threat to emotional well-being/mental health, Poor employment/work conditions, Role conflicts
Rogers-Brown (2015)[78]	Other Social Sciences/Interdisciplinary	Mexico	PI (non-local)	Autoethnographic, Literature Review	Sexual harassment/gender discrimination, Political repression/persecution, Role conflicts, Poor employment/work conditions, Threat to emotional well-being/mental health, Threat to physical well-being/safety
Roll and Swenson (2019)[79]	Political Sciences	Afghanistan, East Timor	Not explicitly specified	Autoethnographic	Threat to physical well-being/safety, Role conflicts, Sexual harassment/gender discrimination, Political repression/persecution, Role conflicts
Rossi (2004)	Development Studies	West-African Sahel State	Not explicitly specified	Autoethnographic	Unequal power dynamics

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Rossouw and Niemczyk (2013)[84]	Other Social Sciences/Interdisciplinary	South Africa	RAs (gate keepers…) (local)	Field Journal	Poor employment/work conditions, Unequal power dynamics, Role conflicts
Rothmann et al (2018)	Heath Sciences	Various	PI (non-local), RAs (non-local), Data Collectors	Qualitative Interview, Focus group	Role conflicts, Threat to emotional well-being/mental health
Roxburgh (2018)	Other Social Sciences/Interdisciplinary	Ghana, Cameroon	PhD (non-local), Data Collectors	Autoethnographic	Threat to emotional well-being/mental health, Limits of IRBs/moral relativism, Sexual harassment/gender discrimination
Salaam and Brown (2013)[62]	Psychology	Various	PI (non-local)	Autoethnographic	Threat to physical well-being/safety
Schwedler (2006)[81]	Political Sciences	Jordan, Yemen	PI (non-local)	Autoethnographic	Political repression/persecution, Unequal power dynamics, Sexual harassment/gender discrimination
Sharma (2019)[93]	Geography/Agricultural Science/Environmental Science	India	PhD (non-local)	Field Journal	Role conflicts, Unequal power dynamics
Shesterinina (2019)[77]	Other Social Sciences/Interdisciplinary	Georgia	PI (non-local)	Qualitative Interview	Threat to emotional well-being/mental health, Role conflicts, Threat to physical well-being/safety, Political repression/persecution
Sheyvens and Lesli (2000)	Development Studies	Various	PI (non-local)	Literature Review	Unequal power dynamics
Shirmohammadi et al (2018)	Psychology	Iran	PI (local), PhD (local)	Qualitative Interview	Threat to emotional well-being/mental health, Poor employment/work conditions, Limits of IRBs/moral relativism
Shordike et al (2017)[36]	Other Social Sciences/Interdisciplinary	Thailand	PI (non-local)	Focus Group	Poor employment/work conditions, Unequal power dynamics
Sibai et al (2019)[89]	Heath Sciences	Syria	Not explicitly specified	Autoethnographic	Unequal power dynamics
Silkin and Hendrie (1997)	Political Science	Ethiopia, Eritrea	PI (non-local)	Autoethnographic	Threat to physical well-being/safety
Simic (2016)	Sociology	Bosnia Herzegovina	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Role conflicts, Doubts about purpose/legitimacy of research/guilt, Political repression/persecution
Simon and Mosavel (2010)[60]	Heath Sciences	South Africa	RAs (gate keepers…) (local)	Autoethnographic	Poor employment/work conditions, Threat to emotional well-being/mental health
Sinha (2017)	Heath Sciences	India	PhD (non-local)	Field Journal	Threat to emotional well-being/mental health, Threat to physical well-being/safety, Doubts about purpose/legitimacy of research/guilt, Sexual harassment/gender discrimination, Poor employment/work conditions
Smeltzer (2012)	Sociology	Malaysia	PI (non-local)	Autoethnographic	Doubts about purpose/legitimacy of research/guilt, Political repression/persecution
Smith et al (2014)[94]	Heath Sciences	Global	PI (non-local), PI (local)		Unequal power dynamics
Sowatey and Tankebe (2018)	Other Social Sciences/Interdisciplinary	Ghana	PI (non-local), PI (local)	Field Journal	Threat to physical well-being/safety

Continued

Table 1 Continued

Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Stodulka (2015)[29]	Heath Sciences	Indonesia	PI (non-local)	Autoethnographic	Role conflicts, Threat to emotional well-being/mental health
Suen (2015)	Other Social Sciences/ Interdisciplinary	China	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Doubts about purpose/legitimacy of research/guilt
Sukarieh and Tannock (2019)	Anthropoligy/Ethnology	Syria	RAs (gate keepers…)	Qualitative Interview	Poor employment/work conditions, Doubts about purpose/legitimacy of research/guilt
Sultana (2007)[83]	Other Social Sciences/ Interdisciplinary	Bangladesh	Not explicitly specified	Autoethnographic, Qualitative Interview	Role conflicts, Sexual harassment/gender discrimination, Unequal power dynamics, Poor employment/work conditions
Sumner and Tribe (2008)[97]	Development Studies	Global	Not explicitly specified	Theoretical	Unequal power dynamics. Limits of IRBs/moral relativism, Role conflicts. Threat to physical well-being/safety
Theron (2016)	Other Social Sciences/ Interdisciplinary	South Africa	PI (local)	Autoethnographic	Role conflicts
Thomson et al (2013)	Other Social Sciences/ Interdisciplinary	Burundi, Rwanda, DRC, Uganda	Not explicitly specified	Autoethnographic	Political repression/ persecution, Role conflicts. Threat to emotional well-being/mental health, Limits of IRBs/moral relativism, Doubts about purpose/ legitimacy of research/guilt
Tsai (2018)[28]	Social Work	Philippines	Data Collectors	Field Journal	Role conflicts, Threat to emotional well-being/mental health
Turcotte-Tremblay and Mc Sween-Cadieux (2018)	Heath Sciences	Various	PhD (non-local)	Autoethnographic	Political repression/ persecution
Turner (2010)	Other Social Sciences/ Interdisciplinary	China, Vietnam	PI (non-local), RAs (gate keepers…) (local)	Qualitative Interview	Unequal power dynamics, Role conflicts, Poor employment/work conditions, Threat to emotional well-being/mental health
Turner (2013)[22]	Geography/Agricultural Science/Environmental Science	China, Vietnam	PI (non-local)	Autoethnographic	Role conflicts, Political repression/persecution, Poor employment/work conditions, Unequal power dynamics, Sexual harassment/gender discrimination, Doubts about purpose/legitimacy of research/guilt
Tyagi et al (2018)	Other Social Sciences/ Interdisciplinary	India	PI (local)	Field Journal	Threat to emotional well-being/mental health, Role conflicts
van den Boogaard (2019)	Development Studies	Ghana, Sierra Leone	PI (non-local)	Autoethnographic	Unequal power dynamics, Sexual harassment/gender discrimination
van Dijk (2015)[50]	Other Social Sciences/ Interdisciplinary	South Africa	PI (non-local)	Autoethnographic	Doubts about purpose/ legitimacy of research/guilt, Role conflicts, Threat to physical well-being/safety, Unequal power dynamics, Threat to emotional well-being/mental health
Vogler (2007)	Other Social Sciences/ Interdisciplinary	Thailand	PI (non-local)	Autoethnographic	Political repression/ persecution

Table 1 Continued

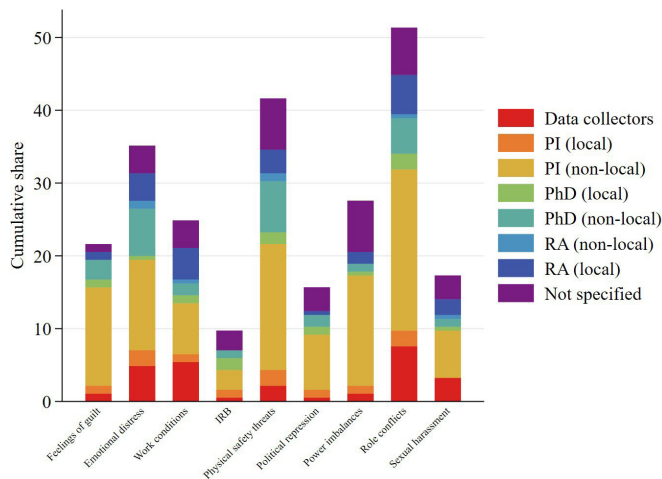| Study reference	Scientific discipline	Country of study	Subjects of ethical assessment	Methodological approach	Ethical challenges
Vuong et al (2017)	Heath Sciences	Vietnam	PhD (local)	Quantitative Survey	Political repression/persecution
Wackenhut (2017)	Sociology	Egypt	PhD (non-local)	Autoethnographic	Threat to physical well-being/safety
Wagman et al (2016)[41]	Psychology	Uganda	PI (non-local)	Autoethnographic	Role conflicts
Walsh et al (2016)[91]	Heath Sciences	Zambia	PI (non-local), PI (local), RAs (gate keepers…) (local), RAs (non-local)	Qualitative Interview	Unequal power dynamics
Wamai (2014)	Political Sciences	Kenya	RAs (gate keepers…) (local), PhD (local)	Autoethnographic	Sexual harassment/gender discrimination, Threat to physical well-being/safety, Threat to emotional well-being/mental health
Williams (2016)[99]	Development Studies	Global	PI (non-local)	Quantitative Survey, Qualitative Interview, Autoethnographic, Document Review, Literature Review	Limits of IRBs/moral relativism
Wilson et al (2018)	Health Sciences	Ghana	Not explicitly specified	Autoethnographic	Poor employment/work conditions, Role conflicts
Wood (2006)[52]	Sociology	El Salvador	PI (non-local)	Autoethnographic	Threat to physical well-being/safety, Role conflicts, Threat to emotional well-being/mental health, Doubts about purpose/legitimacy of research/guilt
Wood (2011)[55]	Political Sciences	Global	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Threat to physical well-being/safety, Role conflicts, Doubts about purpose/legitimacy of research/guilt
Woon (2013)[69]	Political Sciences	Philippines	PI (non-local)	Autoethnographic	Threat to emotional well-being/mental health, Threat to physical well-being/safety, Role conflicts, Doubts about purpose/legitimacy of research/guilt
Yusupova (2019)	Political	Russia	PI (non-local)	Autoethnographic	Role conflicts, Political repression/persecution
Zulu et al (2018)	Heath Sciences	Global	Not explicitly specified	Autoethnographic	Role conflicts
Zwi et al (2006)	Heath Sciences	Global	PI (non-local)	Autoethnographic	Doubts about purpose/legitimacy of research/guilt, Threat to emotional well-being/mental health, Role conflicts

IRBs, institutional review boards; PI, principal investigator; RA, research assistant.

the 'harrowing testimonies of individuals who had survived a massacre' and 'children nearby […] dying from cholera'.[42] Exposure to traumatic narratives, stories and images can have substantial emotional ramifications for research staff. Here, several included studies highlighted researchers' reports of vicarious and secondary trauma.[28 32 44 47 54 55] Further emotional reactions included anxiety and fear,[56–58] insomnia,[56 59 60] depression,[55 60] burn-out,[55 61] as well as social isolation.[46 55 59] Local data collectors are often instructed to treat study participants with empathy and compassion in order to gain their trust and to encourage the disclosure of potential traumatic experiences.[24 38 60 62 63] In consequence, it is difficult for them to maintain an adequate level of emotional distance

as emphasised by a data collector in an included qualitative study: 'whenever they cry, I cry with them'.[63]

Physical safety risks
Of 183, 48 (26%) studies discussed how data collection in LMICs can expose research staff to substantial physical safety threats. Several included studies highlighted security risks associated with harsh weather conditions and natural disasters.[18 64 65] Included studies also pointed to risks associated with travelling to research sites, including traffic accidents,[26] becoming caught up in political protests,[57 66] or being stopped and interrogated by soldiers or rebels.[62 67] Data collection can be particularly dangerous when implemented in settings with high levels of crime,[33 68] gang violence,[33 57] terrorism incidents,[69 70] or

Figure 3 Ethical challenges and affected research staff. IRB, institutional review boards; PI, principal investigator; RA, research assistant.

in postconflict contexts exerting elevated levels of political instability.[71] In three included studies from Iraq, Afghanistan, and Palestine, data collection had to be put on hold intermittently due to political violence and bombings.[15 42 72] Local data collectors are particularly vulnerable to security risks during their visits to the study site and to participants' homes.[39] Non-local research staff, on the other hand, will likely be less familiar with specific security threats and necessary safety precautions and may additionally have a high visibility due to their foreigner status.[72] Similarly, local researchers may also be asked to collect data in settings that they are not necessarily familiar and comfortable with, including for examples vulnerable and marginalised communities,[50] hospitals[73] or displaced person camps,[42] as well as in locations that deviate from their own in terms of language, ethnicity, culture or religion.[74–76] One study suggested that project timelines, interview targets and budget constraints may further lever out necessary security precautions.[77 78]

Political Repression and Persecution

Relatedly, 27/183 (15%) studies identified political repression and persecution as ethical challenges of data collection activities, the scope of which may include imprisonment,[77 78] attempts of intimidation and harassment by police officers or local authorities,[79] accusations and suspicion by local community members[53 80] and seizure of collected data.[80] Non-local researchers further reported cases of travel bans to their research site and confiscation of their identification documents.[80] However, while in many cases they are able to 'evacuate rapidly, local interlocutors rarely can'.[15] Data collection in autocratic countries increases the risk of political persecution, particularly when insurgents or protesters are interviewed and politically sensitive information is disclosed in the process.[78 79 81 82]

Sexual harassment

Of 183, 20 (11%) studies mentioned sexual harassment as another ethical challenge that particularly affects female research staff. Included studies listed accounts of 'sexual objectification',[33] 'unpleasant requests',[83 84] or 'sexually offensive' messages and encounters experienced during data collection.[85] The threat from sexual harassment may further be exacerbated if the work is carried out during hours of darkness and when female data collectors conduct interviews alone in the homes of male participants.[58 80] The vulnerability of female researchers may also be amplified in interactions with male gatekeepers who may be able to abuse given dependency and power dynamics to demonstrate their 'status and masculine dominance'[79] or to reject female researchers as 'a glaring threat to patriarchal norms'.[86]

Inadequate working conditions

Ambitious timelines, inflexible research budgets and prescribed recruitment and interview targets for data collection may increase the risk of inadequate working conditions, as outlined by 48/183 (26%) studies. High workloads are particularly problematic as this may increase staffers' risk for burnout (see above).[23 24 87 88] In addition, studies noted that local research staff members are often recruited in contexts of widespread poverty and unemployment and may therefore be compelled to accept low remuneration and short-term contracts.[37 60 84 88] Due to time constraints and the specific nature of incentive structures, lead researchers (PIs) are often not physically present at the study site and may thus find it difficult to effectively appraise local conditions and to provide local staff members with adequate support. Provisional project structures and intercultural communication gaps may further negatively affect working conditions.[84 87] Moreover, studies pointed to hostilities and accusations made by local community members,[25] and to the physical burden of data collection linked to travelling long distances by foot.[54]

North-South power imbalances

Closely linked to inadequate working conditions are discriminatory power imbalances in multinational research teams, which were cited in 52/183 (28%) studies. Several included studies referenced the terms 'helicopter research' and 'extractive science' to describe dynamics in which researchers from high-income countries set out to collect data in LMICs without adequately giving credit to local contributions and knowledge and without engaging in meaningful capacity building efforts.[15 89–91] Non-local researchers may also fail to actively involve local research partners in knowledge production processes.[90] In consequence, the research process can foster dominance of high-income countries in academia, may fuel inequities in authorships and exploit intellectual contributions of researchers from LMICs.[36 84 91–94] Some studies voiced concerns that research in LMICs may perpetuate the prevailing structural power imbalances of the North-South dichotomy and culminate in racism and neocolonialism.[95 96]

Limited responsiveness of institutional review boards

Lastly, PIs from high-income countries and their academic institutions are often unfamiliar with the specific study setting in LMICs. Relatedly, 18/183 (10%) studies discussed contextual ethical dilemmas and the potentially problematic role of institutional review boards (IRBs). While guidance from IRBs can be an asset, it may also become a burden if guidelines contradict each other or do not correspond to the reality of the local research setting. In this regard, the fundamental question remains as to whether 'universal or local ethics (should) be adopted'[97] and how Western ethics principles may fail to be 'applicable in (the) cultures' they target.[98] These are likely more pronounced when IRBs do 'not have the necessary expertise in the international development context'.[99]

DISCUSSION

This is the first systematic review to examine the ethical challenges faced by research staff across various disciplines when conducting human subjects research in LMICs. The identified challenges were interlinked, multifaceted and affected both local and non-local research staff across all power hierarchies. Listed challenges comprised threats to physical safety, particularly in settings offering up high levels of political instability and emotional harm, in many cases associated with exposure to participants' experiences of trauma, violence, disaster or economic destitution. The emotional distress experienced by research staff members can further be exacerbated by factors such as working overtime, concerns about participants' well-being and role conflicts. As a result of unresolved role conflicts, research staff can internalise feelings of guilt and shame. While local RAs and data collectors play a central role in securing access to study participants and ensuring the cultural adequacy of study materials, they are particularly prone to being subjected to exploitative working conditions and inequities in scientific acknowledgement.

This systematic review emphasises the severity of ethical challenges affecting research staff 'in the field'. This stands in stark contrast to the scope and function of existing ethics guidelines and IRBs, which largely neglect the issue of protecting research staff altogether, particularly when it comes to the ethical standards and needs in host countries. Current ethics guidelines and regulations often do not take into account specific conditions found in local research settings, which makes these less suited for supporting and protecting research staff 'in the field'.[11 19 87 100] Irrespective of that, there are several strategies that individual researchers could implement to alleviate the excessive strains put on research staff and thus increase the ethical integrity of research projects. Regular debriefings with trained counsellors or psychologists to prevent the risk of vicarious traumatisation and compassion fatigue are desirable, and informal counselling with (senior) colleagues can also help to process emotional and psychological strains.[29 44 50 97] Another protective measure could stem from close collaboration with the existing social service infrastructure in a given research environment in order to institutionalise referrals of participants who are at high risk of harm and thereby relieve part of the emotional burden and responsibility that may otherwise be shouldered by research staff.[28 42 100] Importantly, such protection and support structures are not meant to alienate researchers from the 'field' and from the lived experiences of their research participants altogether. 'Empathetic witnessing' can be a valuable component of scientific knowledge generation as long as the psychological well-being of research staff is not harmed. Research endeavours in conflict-prone settings may benefit from comprehensive risk assessments and consultations with local experts prior to data collection.[59 101 102] Lastly, meaningful capacity building by ways of engaging local research partners as coauthors or by offering vocational training programmes may help rectify existing power imbalances between research staff from high-income countries and LMICs.[94 103] More importantly, local research collaborators should be engaged as equal partners and be involved at all stages of the research project so as to ensure that the formulation of research questions and hypotheses as well as the analysis and interpretation of findings is built on profound contextual and cultural knowledge.[15 72 76] Overall, formalised protection mechanisms are urgently needed and could be most effectively developed in dialogue with stakeholders across hierarchies and involving researchers irrespective of their country of origin equally. Given dilemmas of collective action and power asymmetries, structural barriers must be overcome particularly urgently, which could be realised, for example, by providing specific funding to the relevant bodies, universities, IRBs and research ministries. In the long term, policy-makers may create more tangible improvements by translating the debate into institutional change in terms of international agreements and national laws. Lastly, the scientific community should engage in a critical reflection on the term of 'field' research as such and problematise its inherent notion of 'othering' and 'exoticising' research settings—as well as 'local' research staff—in the Global South.

A major strength of this study is its broad scope and the large number of studies that were assessed and synthesised. Based on this wide evidence base, we are able to generate findings that carry relevance and implications across social science disciplines. Another strength of this review is the elaboration of a categorisation scheme for the ethical challenges faced by research staff, developed in an iterative, consensual process between the study authors. This scheme can serve as an essential basis for integrating safeguarding mechanisms in future research projects and for adapting ethics guidelines and IRB assessments to the different kinds of ethical challenges presented here. Yet, while IRB guidelines should be guided by the overarching principles of respect, justice and beneficence, they should also aim to be situated and

practical, and thus tailored and responsive to each particular case and setting.[104]

Some gaps and limitations of this review are noteworthy. First, the majority of included studies discussed challenges faced by research staff members on higher hierarchical levels, namely by PIs or PhD students. While we have outlined possible heterogeneities in the risks and challenges faced by research staff across different hierarchical levels, these observations may suffer from an under-representation of the perspectives and voices of research staff at lower levels and thus a somewhat biased perspective. Engaging local research staff—including data collectors, RAs, and gatekeepers—in an open dialogue is necessary to better represent their perspectives and identify potential additional ethical frictions. Second our systematic review does not exhaustively cover all research staff groups. For example, it excludes experiences that might be unique to postdoctoral researchers on short-term contracts and under high publication pressure, where it is reasonable to assume that both aspects could potentially incentivise engagement in high-risk research projects. Third, our systematic review only included studies that were published in English and may thus be biased towards a more Western, high-income perspective. Third, the search strategy was set up to prioritise scientific outlets and we may therefore have systematically neglected more informal outlets such as blogposts, radio broadcasts, tweets and local news outlets. These, however, may more adequately capture the perspectives of academically disempowered research staff from LMICs, who are particularly likely to make use of these channels. Future research should aim to shed light on researchers' experiences in a more comprehensive, and potentially more representative, manner. For instance, qualitative interviews with local research staff or large-scale surveys targeting all hierarchical layers of a research team could help to shed light on these under-represented perspectives. Finally, most included studies relied on autoethnographic methodology, thus generating quite context-specific, singular data and insights. While methodological peculiarities may induce a stronger interaction of these disciplines with 'the field', the selectivity of reporting may also point to a gap in awareness across disciplines. Assuming that several of the ethical challenges sketched in this review apply to data collection in LMICs more broadly (though to different extents), more training and interdisciplinary exchange on reflexivity and positionality may be required. As suggested previously, more comprehensive reporting rules on ethical aspects could additionally help to increase such reflection.

Research staff play a pivotal role in guaranteeing the success of any research endeavour. The UN Sustainable Development Goal 8.8 aims to 'protect labour rights and promote safe and secure working environments for all'. In order to prevent social science research from violating this very goal, the guiding ethical principle of 'do no harm' should equally apply to any research staff involved. The current COVID-19 pandemic is projected to increase global inequalities and put further strains on working conditions and employment security worldwide. Addressing the complex ethical challenges identified in this review has thus become more important than ever. While we have provided a first set of clear-cut evidence, more research is needed to guide global action and international research collaboration.

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Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on request. Data extraction sheets as well as detailed search strings for each database will be shared via https://osf.io/cjfbh/.

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