INPLASY PROTOCOL

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Culture, sex, and their combined impact on self-report empathy— Meta-analyses

Zhao, Q[2]; Zhou, LL[2].

Condition being studied: The current meta-analysis covers empirical investigations of self-report empathy (evaluated using the EQ and the IRI scales) based on different populations. Studies with general populations and physical/ mental clinical populations were included. Both cross-cultural and non-cross-cultural studies (studies based on a single cultural background) were considered.

Eligibility criteria: We restricted our current meta-analysis to studies that satisfied all of the following criteria: (1) studies evaluated participants' self-report empathy using the EQ or the IRI; (2) studies reported the EQ and IRI version (i.e., scale item number and language); (3) studies reported the EQ and IRI total or subscale scores (e.g., mean and SD) based on the overall sample or both sex groups separately. (4) studies reported participants' cultural backgrounds (e.g., country of origin, nationality, ethnicity, and language).

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 April 2022 and was last updated on 29 April 2022 (registration number INPLASY202240172).

INTRODUCTION

Review question / Objective: Researchers proposed a theory of 'culture–sex interaction effect in self-report empathy'. According to this theory, culture and sex interact to impact self-reported empathy, which is evaluated using the Empathy Quotient (EQ) and the Interpersonal Reactivity Index (IRI). With Western and Asian participants, researchers found that the female-male sex difference in empathy tended to be larger among Westerners than Asians. Meanwhile, the Western-Asian

cultural difference in empathy was more significant for females than males. An innovative question is whether the above culture–sex interaction effect can be observed among empirical studies of the EQ and IRI based on Western, Asian, and other populations. The current study aims to measure the impact of culture, sex, and culture-sex interaction in self-report empathy by Comprehensive Meta-Analyses (CMA). Specifically, we would like to tap into the following topics through the current meta-analysis: (1) estimate the impact of the culture (i.e., country of origin, nationality, ethnicity, and language) on self-report empathy; moreover, evaluate whether the impact of culture was moderated by participants' sex (i.e., female vs. male vs. overall participant); (2) estimate the impact of sex on self-report empathy (i.e., female vs. male); meanwhile, evaluate whether the impact of sex varied across cultural groups (e.g., Westerners, Asians, and Latin Americans); (3) estimate the relative impact of these demographic factors on self-report empathy (e.g., country of origin, nationality, ethnicity, language, and sex); furthermore, evaluate the relative impact of the culture–sex interaction effect for each cultural category (e.g., country of origin, nationality, ethnicity, and language); (4) identify whether the impact of culture, sex, and other related demographic factors on self-report empathy could be relevant to the components of empathy (e.g., the overall empathy, the cognitive empathy, and the emotional empathy); (5) explore the moderating effects of other essential demographic factors (e.g., age, education, social role, and physical and mental diagnosis) on the impact of culture, sex, and the culture–sex interaction effect in self-report empathy.

Condition being studied: The current meta-analysis covers empirical investigations of self-report empathy (evaluated using the EQ and the IRI scales) based on different populations. Studies with general populations and physical/mental clinical populations were included. Both cross-cultural and non-cross-cultural studies (studies based on a single cultural background) were considered.

METHODS

Participant or population: Target studies were based on participants from different cultural backgrounds. Participants recruited from both the general population and clinical settings were considered. Target studies were based on participants from different cultural backgrounds. Participants recruited from both the general population and clinical settings were considered.

Intervention: No intervention was considered in the current meta-analysis.

Comparator: Two main comparators of the current study are culture and sex. The culture was defined by a string of cultural factors, including country of origin, nationality, ethnicity, and language. The sex was determined according to the sex ratio or the sex groups of each study. Additionally, potential moderators of the culture and sex effects of self-report empathy will be identified among a pool of demographic factors (e.g., age, education, social role, and physical and mental diagnosis).

Study designs to be included: Both cross-cultural and non-cross-cultural studies (studies based on a single cultural background) were included. In addition, the results of clinical trials and longitudinal studies were also considered.

Eligibility criteria: We restricted our current meta-analysis to studies that satisfied all of the following criteria: (1) studies evaluated participants' self-report empathy using the EQ or the IRI; (2) studies reported the EQ and IRI version (i.e., scale item number and language); (3) studies reported the EQ and IRI total or subscale scores (e.g., mean and SD) based on the overall sample or both sex groups separately. (4) studies reported participants' cultural backgrounds (e.g., country of origin, nationality, ethnicity, and language).

Information sources: Information of the current meta-analysis was mainly coded from peer-reviewed publications identified in electronic databases (e.g., PubMed, Web of Science, EBSCO, and ScienceDirect). If any critical information was lacking in the study, we would contact the corresponding authors for the information.

Main outcome(s): The current CMA was expected to show: (1) cultural differences in self-report empathy were larger for cultures emphasizing sex-role differentiation than cultures stressing gender equality; (2) sex differences in self-report empathy were more significant with female participants than male participants; (3) the culture, sex, and culture–sex interaction effects were more dominant in the cognitive than the emotional component of empathy. Furthermore, the above culture, sex, and culture–sex interaction effects were expected to be larger for groups subject to social expectations of showing empathy, such as adults (versus children) and professional workers (versus full-time students).

Quality assessment / Risk of bias analysis: The heterogeneity of primary studies covered by the current CMA would be reflected by the indexes of Q (Card, 2015) and I-squre (Higgins & Thompson, 2002). Publication biases of the current CMAs will be gauged by the Fail-safe N, the funnel plots with Duval and Tweedie's trim and fill correction (2000), and the Begg and Mazumdar rank test with Kendall's tau with continuity correction.

Strategy of data synthesis: First, we will use CMA software to examine the 95%CI of the self-report scores for the overall samples and both sex groups separately. Second, we will use CMA software to evaluate the 95%CI of the self-report scores for cultural groups, which are identified according to either individual cultural category (e.g., country of origin, nationality, ethnicity, and language) or a comprehensive consideration of these factors (e.g., Westerners vs. Asians vs. Mixed-cultural people). Third, we will use CMA software to estimate the effect size of sex differences reported by previous publications.

Subgroup analysis: We will conduct subgroup analyses using the Grouping function of CMA software to measure the cultural differences in self-report empathy between sex groups as well as the sex differences between cultural groups (e.g., Western vs. Asian groups).

Sensitivity analysis: The stability and sensitivity of the CMAs will be evaluated using the 'one study removed method' (Borenstein et al., 2011).

Language: English.

Country(ies) involved: China.

Keywords: Xempathy; self-report empathy; culture; sex; gender; cognitive empathy; emotional empathy; empathetic concern; perspective-taking; Interpersonal Reactivity Index; IRI; Empathy Quotient; EQ.

Dissemination plans: We will present the current results as a journal article and oral presentations at domestic and international academic conferences.

Contributions of each author:
Author 1 - Qing Zhao - Author 1 designed the current meta-analysis (e.g., research question and keywords), verified the data coding, managed the analysis and result interpretation, and drafted the manuscript. Author 1 and Author 2 are co-first authors and co-corresponding authors of this study.
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Author 2 - Lili Zhou - Author 2 refined the study keywords, managed the literature searching and screening, conducted the data coding, participated in the analysis and result interpretation, and drafted the manuscript. Author 1 and Author 2 are co-first authors and co-corresponding authors of this study.