

# INPLASY PROTOCOL

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**Conflicts of interest:**  
None declared.

## Mobile phone dependence and interpersonal relationship: A systematic review and meta-analysis protocol

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**Review question / Objective:** 1.Is Mobile phone dependence associated with interpersonal relationship? 2.Is there any abnormality between patients with Mobile phone dependence and healthy people in interpersonal relationship problems?

**Condition being studied:** With the upgrading of mobile phone system, the decline of the price of mobile traffic and the rapid development of information industry, internet surfing is no longer limited to computer devices, and mobile phone have become more portable tool. More and more people are using smartphone to access the internet, but problems caused by excessive use of mobile phone are also emerging. In recent years, some studies have found that there are some differences in interpersonal communication between teenagers who are over-dependent on the mobile phone and normal people, which has aroused widespread concern among researchers. Some teenagers will feel lonely, anxious, afraid and unwilling to communicate with others in the real world, while the online virtual world not only satisfies them, but also makes them reject real interpersonal communication more. Therefore, to more accurately explain the link between mobile phone dependence and interpersonal communication, we will systematically review previous studies that may include different dimensions such as parent-child relationships, teacher-student relationships, peer relationships, and so on.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 February 2021 and was last updated on 18 February 2021 (registration number INPLASY202120058).

### INTRODUCTION

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## METHODS

**Search strategy:** (phone OR cell phone\* OR cellular phone OR mobile phone OR mobile telephone OR smartphone OR cellular telephone) AND (dependen\* OR disorder OR addict\* OR problem\* OR patholog\* OR excessive OR overuse OR abuse OR use OR compulsive) AND (“interpersonal relationship” OR “interpersonal communication” OR “parent-child relationship” OR “teacher-student relationship” OR “peer\* relationship” ).

**Participant or population:** Any adolescents (13 to 25 years) who are diagnosed with mobile phone dependence will be included in this study regardless their race and gender to further study the correlation between mobile phone dependence and interpersonal relationship.

**Intervention:** This is an objective study and no intervention is used. This study aims to

assess the correlation between mobile phone dependence and interpersonal relationship, in order to further clarify the relationship between the two.

**Comparator:** Since most of the included studies are observational, there may be no control group. However, if there is a control group, it may be a healthy person without mobile phone dependence.

**Study designs to be included:** This review covers all studies on the correlation between mobile phone dependence and interpersonal relationship, including all observational studies: cross-sectional studies, case-control studies, and cohort studies. Synthesize the existing research to make a more clear analysis.

**Eligibility criteria:** Inclusion criteria: all cross-sectional, case-control, cohort studies on mobile phone dependence and interpersonal relationship, whether prospective or retrospective, will be included in this review. The following criteria should also be met in these studies: 1) Any adolescents (13 to 25 years) who are diagnosed with mobile phone dependence. 2) There are related content with interpersonal relationships, can design different dimensions of relationship analysis. Exclusion criteria: 1) We will be excluded some other types of behavioural dependence research and some unrelated research. 2) Some studies with too small sample sizes or missing data should also be excluded. 3) If duplicate data is involved, it can be recorded only once.

**Information sources:** The Cochrane Library, PubMed, Embase, Medline, Web of science, China National Knowledge Infrastructure (CNKI), Chinese Biomedical Literature Database (CBM), Wan fang and China Science and Technology Journal Database (VIP), without language/date/type of document restrictions. In addition to the electronic databases, we will also search conference papers, dissertations, and reference lists of relevant reviews, so as to ensure the integrity of the inclusion of the literature.

**Main outcome(s):** Assessment tools include some scales related to mobile phone dependence and interpersonal relationships: General situation questionnaire, the Mobile Phone Addiction Tendency Scale (MPATS), Interpersonal Relationships Integrated Diagnosis Questionnaire (IRIDQ), Quality of Life Scale for Children and adolescents (QLSCA). Through the comprehensive analysis of the scale score, the relationship between the two is studied.

**Additional outcome(s):** It mainly emphasizes the correlation between mobile phone dependence and interpersonal relationship, which may include parent-child relationships, teacher-student relationships, peer relationships, etc. We will also summarize and analyze the relationship about different ages, genders, personalities, life experiences, etc.

**Quality assessment / Risk of bias analysis:** The assessment of publication bias will be conducted by funnel plots and forest plot by Review Manager 5.3. In this study, the Newcastle-Ottawa Quality Assessment Form (NOS) will be used to assess the quality of the selected study. NOS can be used for case control and prospective studies. Cross-sectional studies were evaluated as case control studies. NOS evaluates three quality parameters, selection, comparability, and results. This scale is divided into eight specific projects, which are slightly different in scoring case control and longitudinal study. Each item on the scale is scored with 1 point, except for comparability, which can be adapted to a particular topic of interest, up to a maximum of 2 points. Therefore, the maximum score for each study is 9. Any study smaller than 5 is identified to be high-risk bias. All stages of the quality assessment process are independently performed by two examiners. The differences are resolved through discussion.

**Strategy of data synthesis:** A descriptive synthesis will be carried out for all findings in accordance with the inclusion criteria. A quantitative synthesis will also be used if

the included studies are homogenous enough. We will use the  $I^2$  index to assess the heterogeneity of effect sizes.  $I^2$  index estimates the percentage of variation among effect sizes which can be attributed to heterogeneity. The test of  $I^2$  will be used to detect heterogeneity among included studies. An acceptable heterogeneity is defined when  $I^2 \leq 50$ , while substantial heterogeneity is considered when  $I^2 > 50\%$ . We will synthesize the data using a fixed-effects model if the  $I^2$  value is 50% or less, and we will perform meta-analysis. We will use a random-effects model if the  $I^2$  value is greater than 50%.

**Subgroup analysis:** If possible, we will analyze the effects of age, gender, personality, life experience, etc. on the correlation between the two, in order to make a supplement for study better.

**Sensitivity analysis:** In order to check the robustness of the combined results, we will conduct a sensitivity analysis to assess the impact of studies with a high risk of deviation.

**Country(ies) involved:** China.

**Keywords:** mobile phone dependence, interpersonal relationship, systematic review, meta, protocol.

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