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**Improving the definition of implementation fidelity to better understand implementation outcomes**

**Presenting Authors**

Dr Rajna Ogrin1, 2

**Affiliation**

1. Bolton Clarke Research Institute, Bolton Clarke, Bentleigh, VIC Australia
2. Department of International Business and Asian Studies, Griffith University, Brisbane, QLD, Australia

**Country of residence**

Australia

**Objectives/aims**

The implementation of healthcare intervention studies was systematically reviewed to answer the following questions:

1. How has implementation fidelity been defined?
2. What core fidelity components have been evaluated?
3. How were these components measured?

We then propose a broader definition of implementation fidelity to improve implementation science researchers’ awareness of components requiring inclusion in any implementation fidelity evaluation. The aim is to support accurate evaluations of the contribution of the intervention as implemented to the measured outcomes.

**Methods**

Using a systematic approach, we searched papers mentioning fidelity evaluation of healthcare interventions in databases of peer-reviewed journal articles, including (Ovid MEDLINE and Ovid EMBASE). We included papers from 1998, in the English language and all research designs. Data were extracted and narratively summarised. The documented definitions of fidelity in the included studies were narrow, therefore the literature was also searched for conceptual papers on implementation fidelity, and key aspects from these papers were included to develop a comprehensive definition of implementation fidelity. Measures of implementation fidelity were tabulated.

**Main findings**

Of the forty-two papers meeting the inclusion criteria 19 defined measures of fidelity. However the definitions lacked detail. The degree of compliance of implementation to that which was intended formed the fidelity evaluation focus. Following review of implementation fidelity conceptual papers we identified four elements of fidelity: 1. The intervention is being implemented as intended (operational fidelity) 2. Deciding the permissible level of innovation adaptability at outset (theoretical fidelity); 3. The degree to which an intervention reaches end users (end user fidelity); and 4. The intervention being implemented is sustainable (sustained fidelity).