Adverse effects of isolation in hospitalised patients: a systematic review
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CRD summary
This review concluded that patient isolation might impact negatively on psychological wellbeing and patient safety, satisfaction and care. Well validated assessment tools and larger studies were required to further assess these impacts. The lack of a validity assessment and the limited search mean that the reliability of these conclusions is unclear. The recommendations for practice and research seem appropriate.

Authors’ objectives
To determine whether contact isolation in hospital results in psychological or physical problems for patients.

Searching
MEDLINE and CINAHL were searched from 1966 to April 2009 for studies reported in English. Search terms were reported.

Study selection
Studies that assessed hospital patients placed under isolation precautions for an underlying medical indication and evaluated adverse effects were eligible for inclusion in the review. Studies were required to report both the reason for and the specific type of isolation used. Studies that assessed the use of Life Islands (germ-free isolation units that are no longer in use) were excluded.

All studies except two assessed isolation in adult patients. Two studies were in intensive care units, two studies were in both intensive care units and general wards and other studies were in general wards. Infection was the reason for isolation in all studies; some were exclusively for methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococcus (VRE) infection and in others hospital-acquired infections or multi-drug-resistant bacteria were involved. Most studies placed patients exclusively under contact isolation; others used a combination of airborne, contact or droplet precautions. Slightly fewer than half of the studies used a standardised scoring system to evaluate psychological effects of isolation; others used direct observation, interviews, a specifically designed questionnaire or a combination of methods.

The authors did not state how many reviewers assessed the papers for inclusion in the review.

Assessment of study quality
The authors stated that data on methodological quality were extracted, but no details were provided.

Data extraction
Data were extracted independently using a standardised form and corroborated by all three authors.

Methods of synthesis
The studies were combined in a narrative synthesis due to the descriptive nature of the studies and heterogeneity between them.

Results of the review
Fifteen studies were included in the review (n=1,072 patients, range 19 to 234): one randomised controlled trial (RCT) (n=70), seven case control studies (n=689), six prospective cohort studies (n=294) and one retrospective study (n=19).

Psychological wellbeing: Most studies that assessed this outcome found a negative impact on depression and anxiety scores (four studies), anger-hostility scores (one study) and reported fear and loneliness (two studies).

Patient contact and satisfaction: Three of five studies reported statistically significantly less patient contact on at least one of the assessed parameters; the other two studies found no differences in quantity or quality of care between
isolated and non-isolated patients.

Two studies assessed patient satisfaction. One study showed no differences between patients in isolation and those not in isolation; isolated patients reported positive views of the impact of isolation on their care. The other study reported greatest patient satisfaction when patients felt well informed about their care. A third study that primarily evaluated patient safety found that patients in isolation made statistically significantly more formal and informal complaints about their care (30% versus 8%, p<0.001).

**Patient safety**: One study assessed patient safety and found that patients in isolation experienced worse care and more adverse events on a wide range of measures. These ranged from incomplete recordings of vital signs (14% versus 9%, p<0.001) to incidence of preventable events (20 versus three, p<0.001) when non-preventable events did not differ. Severe adverse events and death rates did not differ between the groups.

**Authors’ conclusions**

Studies showed that patient isolation might negatively impact on psychological wellbeing, patient safety and satisfaction and patient care. Well validated assessment tools and larger studies were required to further assess these impacts.

**CRD commentary**

The review question and inclusion criteria were clear. Only two databases were searched and only for studies in English, which might have led to the omission of relevant studies and potentially to introduction of publication and language biases. The authors reported that they used methods designed to reduce reviewer bias and error during data extraction, but not for study selection. No validity assessment was reported and this made it difficult to determine the reliability of the evidence on which the conclusions were based. The decision to perform a narrative synthesis was clearly appropriate in view of the clinical and methodological heterogeneity of the included studies.

The authors’ conclusions reflected the results of the review. But their reliability is unclear because of the limited search, the lack of a validity assessment and the authors’ acknowledged lack of adjustment for potential confoundings factors such as illness severity. The recommendations for practice and research seem likely to be appropriate.

**Implications of the review for practice and research**

**Practice**: The authors stated that patient education at the time of isolation was critical to the process of reducing anxiety and distress. They stated that the adverse effects of isolation should be monitored closely.

**Research**: The authors stated that further larger studies were required to assess the impacts of hospital isolation on patient outcomes. Such studies should assess a broader array of measures of patient safety in addition to the impacts on psychological wellbeing.

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