Systematic review and narrative synthesis of the impact of Appreciative Inquiry in healthcare

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ABSTRACT

Background Appreciative Inquiry is a motivational, organisational change intervention, which can be used to improve the quality and safety of healthcare. It encourages organisations to focus on the positive and investigate the best of 'what is' before thinking of 'what might be', deciding 'what should be' and experiencing 'what can be'. Its effects in healthcare are poorly understood. This review seeks to evaluate whether Appreciative Inquiry can improve healthcare.

Methods Major electronic databases and grey literature were searched. Two authors identified reports of Appreciative Inquiry in clinical settings by screening study titles, abstracts and full texts. Data extraction, in duplicate, grouped outcomes into an adapted Kirkpatrick model: participant reaction, attitudes, knowledge/skills, behaviour change, organisational change and patient outcomes.

Results We included 33 studies. One randomised controlled trial, 9 controlled observational studies, 4 qualitative studies and 19 non-controlled observational reports. Study quality was generally poor, with most having significant risk of bias. Studies report that Appreciative Inquiry impacts outcomes at all Kirkpatrick levels. Participant reaction was positive in the 16 studies reporting it. Attitudes changed in the seventeen studies that reported them. Knowledge/skills changed in the 14 studies that reported it, although in one it was not universal. Behaviour change occurred in 12 of the 13 studies reporting it. Organisational change occurred in all 23 studies that reported it. Patient outcomes were reported in eight studies, six of which reported positive changes and two of which showed no change.

Conclusion There is minimal empirical evidence to support the effectiveness of Appreciative Inquiry in improving healthcare. However, the qualitative and observational evidence suggests that Appreciative Inquiry may have a positive impact on clinical care, leading to improved patient and organisational outcomes. It is, therefore, worthy of consideration when trying to deliver improvements in care. However, high-quality studies are needed to prove its effects.

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WHAT IS ALREADY KNOWN ON THIS TOPIC?

⇒ Appreciative Inquiry has been successfully used for organisational change outside of a healthcare setting for three decades.
⇒ Changes in healthcare environments as a result of Appreciative Inquiry have been reported, for example, changing processes, defining services and improving the working environment.

WHAT THIS STUDY ADDS?

⇒ We draw on a global evidence base to systematically consider the outcomes reported in Appreciative Inquiry studies to evaluate its effectiveness.
⇒ We show that while the empirical effectiveness of Appreciative Inquiry is unclear, the qualitative and observational data suggest that Appreciative Inquiry could be a positive organisational change technique.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY?

⇒ We would like to encourage those interested in healthcare improvement to consider Appreciative Inquiry approaches for their organisational change initiatives.
⇒ We present the myriad ways that Appreciative Inquiry can have impact within a healthcare environment and encourage implementers/evaluators to use this framework to systematically consider all of these areas to document and report their Appreciative Inquiry studies/projects.

INTRODUCTION

Healthcare organisations are under pressure to improve the quality and safety of their services.[1] One action cycle method for improving quality and safety is Appreciative Inquiry.[1,2] Outside of healthcare, the benefits of Appreciative Inquiry have been widely described and include increased profits, reduced absenteeism and improved customer service.[3] Appreciative Inquiry in the healthcare setting has been less well documented[2] although its popularity is growing.[1,4]

Appreciative Inquiry is a philosophical approach that seeks to harness the unique creativity of organisations, focusing on strengths, rather than becoming defensive and problem focused.[5,6] It encourages new thinking, improvisation and aims to achieve
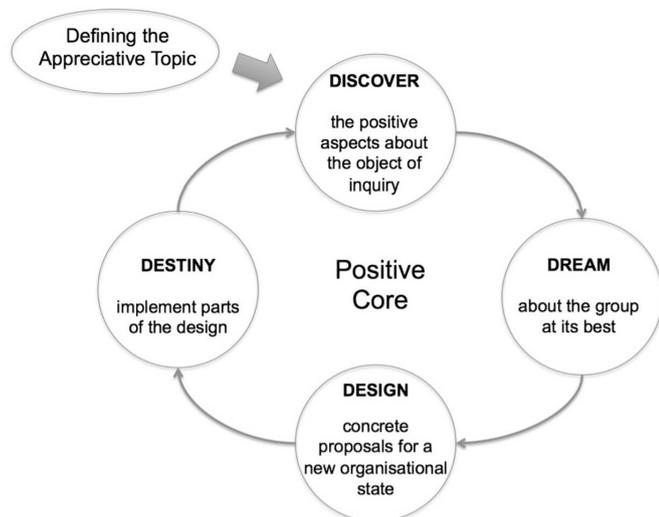
Figure 1 The Appreciative Inquiry Cycle.

transformational change.[7] Appreciative Inquiry investigates the best of 'what is' before thinking of 'what might be', deciding 'what should be' and finally experiencing 'what can be'.[5] There is no 'fixed' method, Appreciative Inquiry is grounded in some 'principles'. However the '4D cycle' has emerged as the leading framework (figure 1).[5]

A practical example of the use of Appreciative Inquiry in a healthcare context can be taken from an Indian study.[8 9] Using the 4D cycle, in the 'Discovery' phase, they arranged meetings with hospital staff, where experiences of saving lives in childbirth were shared and celebrated. Staff then interviewed each other. Following feedback, the 'Dream' phase facilitated staff to develop aspirations. The overarching one was to be 'the best hospital for infection control'. In the 'design' phase, they developed measurable and achievable action plans. In the 'destiny' phase, they discussed ways to sustain their plans and continue the good work.[8]

A systematic review[2] of Appreciative Inquiry in healthcare showed a breadth of issues being addressed but did not fully evaluate the effects. A more recent review of Appreciative Inquiry in nursing practice concluded that Appreciative Inquiry was often implemented without attention to its pivotal components, but instead a 'sanitised' version of the 4D cycle was used.[4] This review will focus on whether Appreciative Inquiry is able to improve healthcare.

METHODS
Appreciative Inquiry is a complex intervention; therefore, heterogeneity between studies in terms of the intervention, study design and outcomes was expected. Narrative synthesis was selected[10] to flexibly identify, include and synthesise diverse studies.[11]

Data sources
A search of major electronic databases (Medline, Embase, Cochrane collaboration, PsychINFO, Sociological

Abstracts, Allied and Complimentary Medicine Database, British Nursing Index, Health Management Information Consortium, Health Business Elite and CINAHL) from 1987, until 8 December 2020, was undertaken. Grey literature was identified using Eldis, UK Data Service and websites of quality improvement and development organisations. Experts were contacted and reference lists of included studies and review papers were screened. Search terms were 'appreciative', '4D cycle', 'transformational' and 'non-punitive' in titles and abstracts. This approach was inclusive, and though would generate a large number of records, would ensure that relevant studies were not missed.

Study selection
Included studies were of any design, but the intervention must have been described or referenced. We included studies of all quality to provide the fullest picture of the real-world implementation of Appreciative Inquiry. We report the study quality and draw conclusions in line with the quality of available evidence. There were no limits on language or country/region studied. Participants included healthcare/allied healthcare staff, delivering direct clinical care. The Appreciative Inquiry interventions could also include healthcare administrators, managers, patients and students.

Studies were not eligible for inclusion if Appreciative Inquiry was being targeted solely at participants not involved in clinical care or if there was no description of the intervention or any of the outcomes of interest.

Data extraction
Two authors screened studies, a third was consulted in cases of disagreement. A data extraction proforma captured the outcomes and study methodology (online supplemental file 1). Two authors extracted data and any discrepancies were resolved by consensus. The contribution of each study to the synthesis was discussed by two review authors who also agreed the quality of the study using a 'weight of evidence' assessment tool[12] supplemented by the guidelines from the EQUATOR Network (http://www.equator-network.org/). A study was considered high quality if only two to three items on the relevant EQUATOR criteria checklist were dropped. Risk of bias assessment was performed for RCTs using the Cochrane risk of bias tool and the Newcastle Ottawa scale for observational studies.

Analysis
A preliminary synthesis used tables and a short textual description of each study. This allowed common themes to be developed and outcomes grouped.

The Kirkpatrick framework was used to group the outcomes of Appreciative Inquiry. It was originally developed to categorise outcomes in educational interventions. The version used here provides greater detail than the original version to enable a better understanding the effectiveness of interventions. The elements include
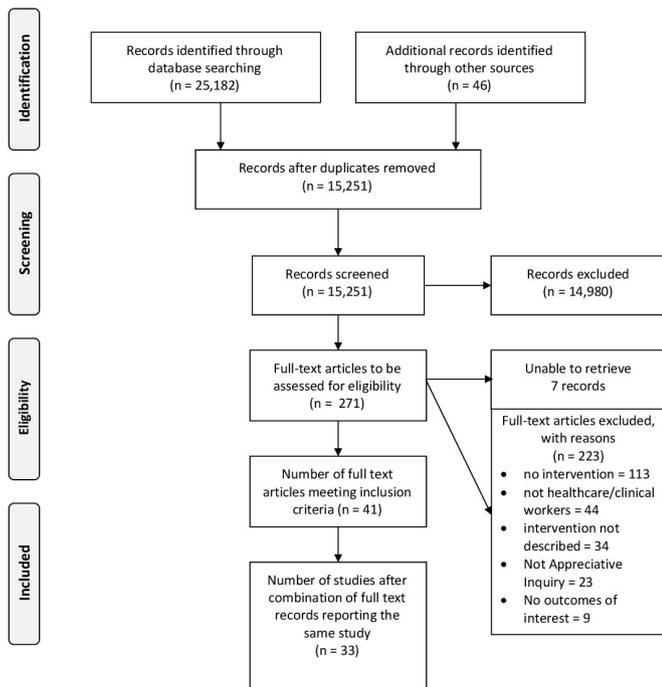
Figure 2 PRISMA flow diagram. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

reaction of participants; modification of attitudes/perceptions; acquisition of knowledge or skills; behavioural change; change in organisational practice; benefits to patients/clients.[13] These categories are used to discuss the available evidence for whether Appreciative Inquiry works.

This study protocol is registered with PROSPERO and this study is reported according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Only the effectiveness of Appreciative Inquiry is reported in this paper. Patients and public were not directly involved in this review.

RESULTS
From 25 182 citations, there were 15 215 titles after deduplication. Following screening 41 papers were eligible for inclusion which report 33 studies. The process and reasons for exclusion are shown in the PRISMA diagram (figure 2). For those not reaching full-text screening, reasons for exclusion were mainly because studies were not about Appreciative Inquiry or healthcare. Online supplemental file 2 summarises each study and shows which records are related to each study. Throughout the Results section, all records of studies discussed will be referenced; therefore, where there is more than one record, both of these references will appear.

The weight of evidence attributed to each study is presented in online supplemental file 2. There are no high-quality randomised controlled trials of this intervention nor are there any other high-quality quantitative studies. There are, two well-conducted qualitative

studies.[14–16] Despite this, the included studies are highly relevant to the review.

A summary of results is presented in table 1. Due to the number of studies, it is not possible to give detailed examples from each; therefore, an exemplar of the evidence for each of the Kirkpatrick areas will be discussed.

How do healthcare workers react to Appreciative Inquiry?
Sixteen studies report a largely positive reaction to Appreciative Inquiry.[14–33] Staff found it enjoyable, refreshing and lively. When looking at the higher quality studies,[14–16 18–21] these positive experiences are also reported. One high-quality study raises the issue that attending Appreciative Inquiry sessions is challenging.[20 21] Three lower quality studies also contribute accounts, which are not wholly positive.[25 32 33] However, all studies report that staff engaged with the process. Appreciative Inquiry allowed staff to reflect on their role, in one study a nurse reported that 'I now remember why I became a nurse'.[22]

The four studies that reported negative reactions discussed how staff found it difficult to maintain attendance[20 21] or to make time for Appreciative Inquiry activities.[25] One study observes that Appreciative Inquiry does not work all of the time,[32] and this is reflected in another study where they are unsure whether Appreciative Inquiry is effecting change.[33]

Despite some conflicting reactions, the available evidence suggests a positive participant reaction to Appreciative Inquiry, although due to the quality of these studies, the strength of this evidence is weak.

Does Appreciative Inquiry change the attitudes of staff?
Seventeen studies reported a positive change in staff attitudes.[6 7 17 18 21 23–25 27 29–41] Over half focus on healthcare practitioners understanding each other better, team working and creating common ground.[6 7 17 18 23 32–34 36 37 39 41] The higher quality studies support these results. There is discussion of improved self-esteem[9] and developing a shared purpose.[34] One medium-quality study describes a powerful image of a 'pathbreaking experience' for the cleaning staff, who sat on the floor at an equal level with their superiors, which was a 'highlight of their service'.[18 19]

Other outcomes include desire to gain knowledge and provide consistent care[36]; desire to embrace change[22 39]; feeling empowered and enthusiastic[25] and increasing motivation and professional self-confidence.[30–32]

The studies report positive changes in attitude; however, the strength of evidence for this is weak.

Does Appreciative Inquiry improve the knowledge and skills of healthcare workers?
Fourteen studies report[6 7 13–16 19 20 23 32 38 40–47] improvements in knowledge and skills, but this was not universal. There were two studies with quantitative measures of knowledge, one of which was high quality. Both showed an increase in knowledge scores following the implementation of Appreciative Inquiry.[17 20 21] However, one element of the low-quality study,[17] the group learning,

Table 1 A summary of the results containing examples of evidence according to Kirkpatrick areas

Study ID	Reaction	Attitudes	Knowledge/skills	Behaviour	Organisational practice	Benefits to patients
Randomised controlled trial						
Ruhe et al [34]	X	Shared purpose and identity	X	Developing action steps and timelines	No change in the preventative service delivery score. New staff morale activities & patient care systems.	X
Controlled Observational Studies						
Chen et al [17]	Highly satisfied with the programme	X	Improved scores for self-learning. Group-learning improvement not significant	X	X	X
Hussein et al and Sharma et al [8 9]	X	Improved self esteem and understanding of each others roles, management more approachable.	Improved knowledge about infection control and the importance of cleanliness.	Improved teamwork, better work allocation, definition of responsibilities. Changes in infection control practice for example, handwashing	Regular staff meetings introduced or improved to make discussion of infection prevention more effective.	Lower infection incidence in the intervention compared with the control group
Joshi and Subramanyan and Joshi et al [18 19]	Positive reaction to content	Working together better	X	X	Better relationships with the communit. Cleaner surroundings	Improved patient satisfaction in exit interviews
Kavanagh et al and Kavanagh [20 21]	Enjoyable and refreshing but challenging to attend	X	Mean knowledge scores increased over time	No evidence of behaviour change of staff	X	No difference in children's pain intensity scores
Moorer et al [49]	X	X	X	Altered practice to round hourly on patients and hold multidisciplinary bedside ward rounds	Senior leaders visiting the clinical areas, snack cart being available when patients waiting for beds.	Improved patient experience measured by recommending to a friend.
Page et al [50]	X	X	X	Staff have a series of conversations with patients to discuss their needs, and develop or begin a care plan.	Care plan now exists and families have ownership of it and carry it around. Clear expectations on staff to complete this.	Carers feel more involved in care planning and decision making on intervention wards.
Shendell-Falik et al [35]	X'	Understanding of each other's challenges	X	X	Improved adherence to guidelines. Introduction of new protocols. Increased satisfaction and teamwork	Improved patient satisfaction from 79.1% to 87.2%
Stefaniak [22]	Positive reaction and general enjoyment	Desire to spread Appreciative Inquiry	X	X	Decreased vacancy and turnover rates. New recruitment CD and exit interviews. Staff morale activities	X

Continued

Table 1 Continued

Study ID	Reaction	Attitudes	Knowledge/skills	Behaviour	Organisational practice	Benefits to patients
Wagh et al[52]	X	X	X	X	X	Reduction in cases diagnosed and a reduction in the false positive case
Qualitative studies						
Carter et al and Carter[14 15]	Positive sharing of practice and stories	X	Understanding of what makes things work well	X	Single point of referral system now being piloted	X
Dewar et al[43–45]	X	X	A better sense of understanding the needs of patients	Altered interactions with patients & carers	Focus on meeting the patients non-medical needs using positive caring statements	X
Trajkovski et al[16]	Positive experience	X	Understanding the needs of parents	X	X	X
Yoon et al[36]	X	Desire to gain knowledge and provide consistent care	X	Changes implemented by 4/9 people for example, increased oral care frequency	Oral care incorporated into the agenda for regular staff meetings	X
Non-Randomised Observational Studies						
Aggett et al[23]	Useful and relevant	X	X	Better discussion of and culture around clinical risk	Regular meetings to highlight practices reducing risk. 30% feel clinical decision making improved	X
Alfred and Shohet and Hobbs[37 38]	X	Improved teamwork, better interpersonal relationships, common goals	X	Improved communication and appreciation; emails and meeting agenda items	Reduced staff turnover (by 3%) reduced sickness (by 2%)	X
Baker and Wright[24]	Positive experience	Brought people closer together	Identification of key aspects for successful managed care networks	Changing individual practice for example by greeting patients.	Regular multi-disciplinary meetings. Joint clinic started with email access to the specialist centre and appointed representatives in one region.	X
Brookes[39]	X	Desire to embrace change	Staff developing knowledge as a team resource	X	Six monthly basic life support introduced	X
Buck[40]	X	Sense of community scores insignificant improvements. Likelihood to leave increased.	X	X	X	X

Continued

Table 1 Continued

Study ID	Reaction	Attitudes	Knowledge/skills	Behaviour	Organisational practice	Benefits to patients
Campbell et al[25]	Favourable experience but no time	Feeling of empowerment and enthusiasm	X	X	X	X
Carter et al[26]	Lively discussions	X	X	X	New patient pathway, changed care delivery model, monthly staff meetings	X
Challis[46]	X	X	Factors effecting nurse longevity	X	Reduction in vacancy rate	X
Clarke et al[47]	X	X	How to achieve good handoffs	X	Development and implementation of a transfer checklist	X
Clossey et al[27]	Positive staff reports	X	X	X	Design of more user friendly paperwork	X
Guliar and Start[48]	X	X	Understanding of what patients need from staff	X	Collaboration with local diabetologist, patient education support group and patient held notes developed	X
Halm and Crusoe[51]	X	X	X	X	More frontline workers took part in shared leadership councils and there were better relationships between departments	X
Havens et al[28]	Excitement and a feeling of positive insights	Transforming their approach to infection prevention and departmental vision	X	Meetings, start with the positive; improved interdepartmental communication; altered human resources interactions	Appreciative start to each meeting in some hospitals. Use of Appreciative Inquiry to frame employee surveys and patient satisfaction feedback sessions	X
Jaccai and Dorman[29]	Effective approach	X	X	X	Implementation of knowledge management resource and a leadership education series. No one performing hospital in area surgical and pneumonia care	Improved patient satisfaction by 37% and the birth centre being ranked in the 99th percentile nationally
Lazic et al[30 31]	High satisfaction with course	Motivation and professional self confidence	X	X	X	X

Table 1 Continued

Study ID	Reaction	Attitudes	Knowledge/skills	Behaviour	Organisational practice	Benefits to patients
Mash et al[41]	X	Staff more satisfied and motivated	Improvements attempted but skill improvement confined to certain groups.	Well functioning team	Improved patient education, patient support groups, regular team meetings, summary sheet for patients, implementation of national foot screening guidelines & retinal screening	X
Messerschmidt[32]	Spirit raising, but doesn't always work	Increased social equality and self confidence	X	Nurses taking initiative; cleaners working harder	gX	X
Reed et al[33]	Enjoyable but not sure if its effective	Shared organisational perspective	Understanding of the system and how it worked		X	X
Seebohm et al[42]	X	Less isolation, understand need to build relationships	Understanding of the needs and desires of patients	X	X	X

was poorly implemented, and knowledge scores for this element did not increase.

A common theme was understanding of the needs of patients and families.[16 42–45 48] In one study, parents in a neonatal unit shared how they wanted to be treated, including being seen as important, being involved in their baby's 'firsts' and fathers being more involved.[16] Healthcare practitioners developed a better understanding of the system and how it works.[14 15 24 33] Other studies reported new knowledge around performing good handovers[47] and understanding what factors contributed to nursing longevity.[46]

The quantitative evidence for Appreciative Inquiry improving knowledge and skills is equivocal, based on two studies one of which is poor quality. The remaining evidence, although weak, suggests that knowledge and skills can improve using Appreciative Inquiry.

Does Appreciative Inquiry facilitate behaviour change?

Thirteen studies reported behaviour change of staff,[4 8 9 20 21 23 24 28 32 34 36–38 41 43 44 49 50] including three in a quantitative way.[20 21 23 41] The highest quality study was a controlled study, which showed no change in pain score of the patients.[20 21] The other two studies were lower quality. One used a survey to ask about whether staff changed their behaviour in terms of discussing clinical risk: 70% felt it had improved.[23] In the final study, a teamwork survey showed that the teams were performing well; however, there was no pre-intervention or discriminatory questions about the change in behaviour.[41]

The remaining 10 studies reported behaviour change qualitatively.[6 7 23 31 33 35–37 42–44 48 49] In the highest quality study, improved teamwork resulted in better allocation of work, clear responsibilities and changes in individual practice. The medium-quality study reported how a team developed action steps.[34] Other studies contributing evidence were of low quality. One reported 92% of commitments to change were implemented.[36] Five studies observed that staff changed their interactions with patients.[24 36 43–45 49 50] Examples of this include nurses increasing the frequency and consistency of oral care in a rehabilitation hospital[36] and nurses doing hourly rounding to ensure patient's needs (eg, toileting and comfort) are met.[49] Communication also featured. One study reported improved communication and appreciation of staff[37 38] and another discussing altered interactions with human resources.[28] One study reported that nurses took more initiative and that cleaners worked harder to keep surroundings clean.[32]

While there is no high-quality evidence for Appreciative Inquiry resulting in behaviour change, the evidence that is available suggests that change does occur, although it is weak.

Does Appreciative Inquiry lead to organisational change?

Twenty-three studies describe organisational change[8 9 14 15 18 19 22–24 26–29 34–39 41 43–51], six measured it.[22 23 34 35 37 38 46] The medium-quality randomised

controlled trial measured preventative service delivery score, in primary care practices. The study showed no change.[34]

The remaining studies were of low quality. One controlled study showed improved delivery of patient care through nutritional assessment by 11% and adherence to cardiac enzyme regimens increased by 9.2%. There was increased nursing satisfaction and teamwork.[35] A non-controlled study identified that 30% of staff felt that clinical decision-making had improved.[23]

Retention and recruitment were discussed in three studies; in one of the controlled studies, turnover decreased from 10.35% to 8.42%, with vacancy rate decreasing form 6.2% to 4.1%.[22] One of the non-controlled studies showed a decreased staff turnover by 3% and sickness by 2%; however, this could represent normal variation.[37 38] Finally, the vacancy rate fell from 12.1% to 8.9% in another non-controlled study.[46]

Other studies made observations about changes that were implemented. The highest quality study discussed the introduction or improvement of regular staff meetings across the sites.[8 9] The medium-quality studies report new staff activities, systems[34] and improved surroundings.[18 19]

Some areas of change were described in multiple studies: altered patient care pathways or protocols[26 34 35 47 50]; new mechanisms for delivering care[14 15 24 26 48]; positive interactions with Human Resources[22]; staff meetings were initiated or altered[8 9 23 24 26 36 51] and staff education or training was improved.[29 39]

The trial did not show quantitative evidence of organisational change. The controlled studies showed that Appreciative Inquiry can change organisational practice and qualitative studies and non-controlled studies, which report on organisational practice, reported positive changes. While the evidence is weak, it does suggest that Appreciative Inquiry has the potential to improve organisational practice.

Does Appreciative Inquiry lead to improved patient outcomes?

Of the eight studies reporting patient outcomes,[8 9 18–21 29 35 49 50 52] four were high/medium-quality controlled studies[8 9 18–21] and four were low-quality non-randomised studies.[29 35 49 50]

Of the higher quality studies, the controlled study in India, aiming to reduce puerperal infection rates, followed up 8124 women. It revealed decreased incidences of infection in the control (7.4% to 3.5%) and intervention (4.3% to 1.7%) groups; although the levels in the intervention group fell more, this was not statistically significant. However, this was on a background of a decreased infection rate in both groups and a larger percentage point decrease in the control group, and, therefore, firm conclusions are difficult to draw.[8 9] Another controlled study which measured pain intensity scores in a paediatric ward showed no difference.[20 21] A medium-quality study aimed to improve leprosy detection

and false-positive rates. They saw a reduction in the false-positive rate of –9% (95% CI –20 to 1.3).[52] This suggests that there is no strong evidence to support Appreciative Inquiry being effective.

Another higher quality study and the three lower quality ones report on patient satisfaction scores. A controlled study from India found that 89% of patients were satisfied with the care pre-intervention and 96% after. They also saw a 28% improvement in patient-reported attentiveness of staff and a 20% improvement in patients feeling that staff had treated them well. The control group remained stable.[18 19]

One lower quality controlled study measured patient satisfaction in a US hospital with a focus on cardiac patients. Patient satisfaction with care improved by 10.2%.[35] Another that reported improved satisfaction was a case study of a health system in the USA. Their scores improved by 37%.[29] The final study reported that more patients would 'definitely' recommend the hospital to a friend after the study (74.4%) compared with before (68.9%).[49] These studies did not report on measures of spread.

One low-quality study reported the impact of the intervention on carers.[50] 89% felt involved in care planning post-intervention compared with 66% before, and carers felt consulted about decisions in 100% of cases post-intervention compared with 92% before, although no confidence intervals are provided.[50]

In summary, five studies, one medium-quality and three low-quality showed improvements in patient satisfaction, and one showed improved involvement in decision-making. The three higher quality studies showed no significant changes. The evidence contributing to this is not persuasive as it is neither of high quality nor consistent. The lower quality studies do suggest that there may be a trend towards improvement in patient care following Appreciative Inquiry; however, the evidence for any improvement is weak.

DISCUSSION

We identified 33 studies using Appreciative Inquiry to change clinical care. The majority were small change initiatives, lacking methodological rigour. Appreciative Inquiry as an approach to improve the quality of healthcare and patient safety is in its infancy but, despite weak evidence of its effectiveness due to the low-quality of studies, the positive reports suggest it warrants more rigorous evaluation.

An important consideration is the philosophy of Appreciative Inquiry,[5] with the idea that the world is open to constant revision, which is not immediately congruent with positivist methods of evaluation such as randomised controlled trials. Consistent with this incongruence, we only identified one trial that met the inclusion criteria for this review,[34] and one further healthcare trial that did not.[53] It is more likely that action research approaches would favour evaluation methodologies rather than

clinical trials, and this may be one reason for the small number of controlled studies.

Patient satisfaction is one area which Appreciative Inquiry could plausibly affect because it may foster changes at an interpersonal level. Analysis of Appreciative Inquiry in other settings has suggested that both the process (eg, the discovery phase) and the philosophy (the unconditional positive question) shape the relationships that are formed and through this discourse relationships can flourish.[54] This is supported by our recently published study focusing on improving staff working lives using Appreciative Inquiry where relationships and patient experience improved.[55]

In terms of patient outcomes, there is some promising evidence for the use of Appreciative Inquiry from a study of infection control measures,[8 9] although the study was underpowered, and from a leprosy study in India.[52] The only other study on pain management in paediatrics looking at patient outcomes reported no change during the study.[20 21] However, for patient outcomes, there are three key issues: whether the Appreciative Inquiry is aiming to affect change in this area, whether the intervention actually affects change, and if it can be accurately measured. Many studies did not attempt measurement. Sample sizes were too small to demonstrate or attribute change to the intervention, nor may it be possible to attribute change in patient outcomes to a complex intervention.[56] Furthermore, for predefined patient outcomes to be measured, the focus of the Appreciative Inquiry needs to be predetermined. This could reduce its effectiveness, as participants may not be focusing on what is important to them, instead focusing on a more conventional change process. A broad analysis of Appreciative Inquiry methods has shown that when this happens, change due to Appreciative Inquiry is less likely to be transformational.[57] Methods which were used in studies in this review to incorporate this included allowing the team to choose its own idea first[34] and introducing best practice guidelines as part of the process.[36]

Finally, interventions need time to embed, so longer study durations may be required. When considering evidence from social work, interventions can take 2–4 years to implement.[58] This is similarly modelled when considering the evidence-to-practice gap in healthcare.[59] Considering Appreciative Inquiry specifically, we have shown on a small scale in our recent paper, how organisations take up interventions in different ways.[55]

There is no clear evidence to suggest that Appreciative Inquiry can change patient outcomes. However, it seems unlikely that it will cause harm to patients, and there is some promising, although poor-quality and inconclusive evidence for its use.

The evidence for Appreciative Inquiry changing the way organisations work is more convincing and plausible considering evidence from outside of healthcare.[7] Changes included reduced staff turnover, sickness and altered protocol adherence. However, success was not universal. Many studies reported changes such as morale improvement activities, altered human resources policies and new patient care pathways. While these were not captured in a quantitative manner, their introduction impacts organisational practice and may go on to affect measurable outcomes.[60]

There is some evidence to suggest that behaviour change is possible with Appreciative Inquiry. Appreciative Inquiry seemed to produce positive outcomes for knowledge and skill development, with the two studies which measured this outcome quantitatively showing improved knowledge, with other qualitative reports of changed behaviour. Attitudes changed following Appreciative Inquiry, particularly teamwork, understanding each other and communication.

Appreciative Inquiry is reported in a largely positive light, with few negative findings. This may be because the ethos is to focus on the positive and authors are often synonymous with the implementation team. This reporting bias may result in overly positive accounts of Appreciative Inquiry. An additional weakness of the available literature is publication bias. It is unlikely that negative findings of Appreciative Inquiry interventions would be published outside of a rigorous evaluation, adding to the positive slant on the literature.

Another influence is that Appreciative Inquiry is often instigated for quality improvement rather research. Most of the studies capture qualitative data or are reports of real-life implementation, with few studies systematically collecting outcome data. While this may have positives, for example, the organisation being committed to change, it makes interpretation of the impact of Appreciative Inquiry difficult. Nonetheless, from the limited evidence available, Appreciative Inquiry does seem to bring about change within organisations and the Kirkpatrick model helps in illuminating this.

The Kirkpatrick framework was not designed for organisational change studies, and, therefore, it is not perfect. For example, it does not consider the implementation or context of the intervention.[61] However, it was a useful framework to consider heterogenous outcomes.

The current evidence of the effectiveness of Appreciative Inquiry is not conclusive, with a lack of empirical evidence for process or clinical outcomes. The studies identified in this review suggest that Appreciative Inquiry has the potential to effect positive change for patients and organisations. It could, therefore, be particularly useful in the context of the needing to improve quality and safety of a service. However, to draw firm conclusions about the effectiveness of Appreciative Inquiry, high-quality studies are required.

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Data collection form Appreciative Inquiry

GENERAL INFORMATION	
Date of Extraction	
Who Extracting	
Title	
Author	
Journal	
Publication Year	
Citation	

INCLUSION/EXCULSION	
Who participating in AI? (if no HCW's EXCLUDE)	
Is an action cycle implemented or evaluated? (If No –EXCLUDE)	
Is there a clear description of the intervention?(if no – is it referenced elsewhere? If NO – EXCLUDE)	

BACKGROUND	
Setting for AI:	
Who involved in AI:	
Number of people involved in AI:	
Indication of proportion of group involved in intervention (ie if there are 100 possible participants are all involved):	
Who initiated AI (e.g. management, staff, pure research)	
Are there any groups clearly supportive of AI (e.g. staff, management)	
The defined methodology of the study (e.g. before and after, observational, qualitative etc.)	
Any Trigger for AI	

THEORY OF CHANGE	
Is a theory of change for the AI Documented?	
Diagram/description of theory of change:	
Was the theory of change updated following the intervention?	
If updated how was it changed?	

Hypothesis	
Is a hypothesis Documented?	
What is the hypothesis?	

Aim	
Are aims/objectives Documented?	
What is the what is it?	

DESCRIPTION OF IMPLEMENTATION OF AI	
Was AI implemented in it's usual 4/5 steps? (Explain)	
How was AI adapted to the setting?	
If yes describe each step below:	
Defining the Inquiry	
Discover:	
Dream:	
Design:	
Destiny:	
Any other information about the implementation of the intervention e.g. did people continue activities beyond just in any set meetings:	
How was the process documented?	

CONTEXT	
Description of any documented contextual factors:	

How were these factors collected/documented?	

MECHANISM OF CHANGE	
Did the authors propose any mechanisms through which any changes may have been brought about?	

OUTCOME MEASURES: List each outcome measure and describe how it was measured and it's result

Outcome Measure	Result

WHOM DID THE INTERVENTION IMPACT UPON: List any group whom the intervention impacted upon and the documented effects.

Group	Documented effects

SHORT TEXTUAL DESCRIPTION OF THE STUDY:

Quality (please delete as appropriate):

CONSORT (RCT):

Section/Topic	No	Checklist item	included
Title and abstract			
	1a	Identification as a randomised trial in the title	
	1b	Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts)	
Introduction			
Background and objectives	2a	Scientific background and explanation of rationale	
	2b	Specific objectives or hypotheses	
Methods			
Trial design	3a	Description of trial design (such as parallel, factorial) including allocation ratio	
	3b	Important changes to methods after trial commencement (such as eligibility criteria), with reasons	
Participants	4a	Eligibility criteria for participants	
	4b	Settings and locations where the data were collected	
Interventions	5	The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	
Outcomes	6a	Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	
	6b	Any changes to trial outcomes after the trial commenced, with reasons	
Sample size	7a	How sample size was determined	
	7b	When applicable, explanation of any interim analyses and stopping guidelines	
Randomisation:			
Sequence generation	8a	Method used to generate the random allocation sequence	
	8b	Type of randomisation; details of any restriction (such as blocking and block size)	
Allocation concealment mechanism	9	Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	
Implementation	10	Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	
Blinding	11a	If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how	
	11b	If relevant, description of the similarity of interventions	
Statistical methods	12a	Statistical methods used to compare groups for primary and secondary outcomes	
	12b	Methods for additional analyses, such as subgroup analyses and adjusted analyses	
Results			
	13a	For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analysed for the primary outcome	

Participant flow (a diagram is strongly recommended)	13b	For each group, losses and exclusions after randomisation, together with reasons	
Recruitment	14a	Dates defining the periods of recruitment and follow-up	
	14b	Why the trial ended or was stopped	
Baseline data	15	A table showing baseline demographic and clinical characteristics for each group	
Numbers analysed	16	For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	
Outcomes and estimation	17a	For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	
	17b	For binary outcomes, presentation of both absolute and relative effect sizes is recommended	
Ancillary analyses	18	Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	
Harms	19	All important harms or unintended effects in each group (for specific guidance see CONSORT for harms)	
Discussion			
Limitations	20	Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses	
Generalisability	21	Generalisability (external validity, applicability) of the trial findings	
Interpretation	22	Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	
Other information			
Registration	23	Registration number and name of trial registry	
Protocol	24	Where the full trial protocol can be accessed, if available	
Funding	25	Sources of funding and other support (such as supply of drugs), role of funders	

STROBE (Observational Studies)

	Item No	Recommendation	Included
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	
Objectives	3	State specific objectives, including any prespecified hypotheses	
Methods			
Study design	4	Present key elements of study design early in the paper	
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	
Bias	9	Describe any efforts to address potential sources of bias	
Study size	10	Explain how the study size was arrived at	
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	

	(*b*) Describe any methods used to examine subgroups and interactions	
	(*c*) Explain how missing data were addressed	
	(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy	
	(*g*) Describe any sensitivity analyses	

COREQ (Qualitative):

	Question	**Evidence**
Domain 1: Research team and reflexivity:		
Personal characteristic:	1. Interviewer/Facilitator: which author/s conducted the interview or focus group?	
	2. Credentials: What were the researcher's credentials e.g. PhD/MD?	
	3. Occupation: What was their occupation at the time of the study?	
	4. Gender: Was the researcher Male or Female?	
	5. Experience and training: What experience or training did the researcher have?	
Relationship with participants:	6. Relationship established: was a relationship established prior to study commencement?	
	7. Participant knowledge of the interviewer: What did the participants know about the researcher? E.g. personal goals, reasons for doing the research	
	8. Interviewer characteristics: What characteristics were reported about the interviewer/facilitator? E.g. bias, assumptions, reasons and interests in the research topic	
Domain 2: Study Design:		
Theoretical framework:	9. Methodological orientation and Theory: What methodological orientation was stated to underpin the study? E.g. grounded theory etc…	
Participant selection	10. Sampling: how were participants selected?	
	11. Method of approach: Howe were participants approached?	
	12. Sample size: How many participants were in the study?	
	13. Non-participation: how many people refused to participate or dropped out? Reasons?	
Setting	14. Setting of data collection: where was the data collected?	
	15. Presence of non- participants: Was anyone else present besides the participants and researchers?	
	16. Description of sample: what are the important characteristics of the sample? E.g. demographic data? Date?	
Data collection:	17. Interview guide: were questions, prompts, guides provided by the authors? Was it pilot tested?	
	18. Repeat interviews: were repeat interviews carried out? If yes, how many?	
	19. Audio/visual recording: Did the research use audio or visual recording to collect the data?	
	20. Field notes: Were field notes made during and/or after the interview or focus group?	
	21. Duration: What was the duration of the interviews or focus group?	
	22. Data saturation: Was data saturation discussed?	
	23. Transcripts returned: Were transcripts returned to participants for comment and/or correction?	
Domain 3: analysis and findings:		
Data analysis	24. Number of data coders: How many data coders coded the data?	
	25. Description of the coding tree: Did authors provide a description of the coding tree?	

	26. Derivation of themes: Where themes identified in advance or derived from the data?	
	27. Software: What software, if applicable, was used to manage the data?	
	28. Participant checking: Did participants provide feedback on the findings?	
Reporting:	29. Quotations presented: were participant quotations presented to illustrate the themes/findings? Was each quotation identified? E.g. participant number	
	30. Data and findings consistent: Was there consistency between the data presented and the findings?	
	31. Clarity of major themes: Were major themes clearly presented in the findings?	
	32. Clarity of minor themes: Is there a description of diverse cases or discussion of minor themes?	
	Any other comments	

SQUIRE (Quality improvement):

Title and Abstract: Did you provide clear and accurate information for finding, indexing and scanning your paper?		
Title:	Indicates the article concerns the improvement of quality (broadly defined to include the safety, effectiveness, patient-centeredness, timeliness, efficiency and equity of care)	
	States the specific aim of the intervention	
	Specifies the study method used	
Abstract:	Summarises precisely all key information from various sections of the text using the abstract format of the intended publication	
Introduction: why did you start		
Background Knowledge	Provides a brief, non-selective summary of current knowledge of the care problem being addressed and characteristics of organizations in which it occurs.	
Local problem	Describes the nature and severity of the specific local problem or system dysfunction that was addressed.	
Intended improvement	Describes the specific aim (changes/improvements in care processes and patient outcomes) of the proposed intervention	
	Specifies who (champions, supporters) and what (events, observations) triggered the decision to make changes, and why now (timing).	
Study Question	States precisely the primary improvement – related question and any secondary questions that the study of the intervention was designed to answer.	
Methods: What did you do?		
Ethical issues	Describes ethical aspects of implementing and study the improvement, such as privacy concerns, protection of participants physical well-being and potential author conflicts of interest and how ethical concerns were addressed.	
Setting	Specifies how elements of the local care environment considered most likely to influence change/improvement in the involved site or sites were identified and characterized.	
Planning the intervention	Describes the intervention and its component parts in sufficient detail that others could reproduce it.	
	Indicates main factors that contributed to choice of the specific intervention (for example analysis of causes of dysfunction; matching relevant improvement experience of other with the local situation)	
	Outlines initial plans for how the intervention was to be implemented: e.g. what was to be done	

	(initial steps; functions to be accomplished by those steps; how tests of change would be used to modify intervention), and by whom (intended roles, qualifications, and training of staff).	
Planning the study of the intervention	Outlines plans for assessing how well the intervention was implemented (does or intensity of exposure)	
	Describes mechanisms by which intervention components were expected to cause changes, and plans for testing whether those mechanisms were effective	
	Identified the study design (for example, observational, quasi-experimental, experimental) chosen for measuring impact of the intervention on primary and secondary outcomes if applicable.	
	Explains plans for implementing essential aspects of the chosen study design, as described in publication guidelines for specific designs if applicable.	
	Describes aspects of the study design that specifically concerned internal validity (integrity of the data) and external validity (generalizability).	
Methods of evaluation	Describes instruments and procedures (qualitative, quantitative or mixed) used to assess a) the effectiveness of implementation, b) the contributions of intervention components and context factors to effectiveness of the intervention and c) primary and secondary outcomes.	
	Reports efforts to validate and test reliability of assessment instruments.	
	Explains methods used to assure data quality and adequacy (for example, blinding; repeating measurements and data extraction; training in data collection; collection of sufficient baseline measurements).	
Analysis	Provides details of qualitative and quantitative (statistical) methods used to draw inferences from the data	
	Aligns unit of analysis with level ant which the intervention was implemented if applicable	
	Specifies degree of variability expected in implementation, change expected in primary outcome (effect size and ability of study design (including size) to detect such effects	
	Describes analytic methods used to demonstrate effects of time as a variable (for example, statistical process control).	
Results: What did you find?		
Outcomes Nature of setting and improvement intervention	Characterizes relevant elements of setting or settings (for example, geography, physical resources, organizational culture, history of change efforts), and structures and patterns of care(for example staffing, leadership) that provided context for the intervention.	
	Explains the actual course of the intervention (for example, sequence of steps, events or phases; type and number of participants at key points), preferably using a time-line diagram or flow chart.	
	Documents degree of success in implementing intervention components	
	Describes how and why the initial plan evolved and the most important lessons learned from that evolution , particularly the effects of internal feedback from test of change (reflexiveness).	
Outcomes: Changes in processes of	Presents data on changes observed in the care delivery process	

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care and patients outcomes associated with the intervention		
	Presents data on changes observed in measures of patient outcome (for example, morbidity, mortality, function, patient/staff satisfaction, service utilization, cost, care disparities)	
	Considers benefits, harms, unexpected results, problems, failures	
	Presents evidence regarding the strength of association between observed changes/improvements and intervention components/context factors	
	Includes summary of missing data for intervention and outcomes	
Discussion: What do the findings mean		
Summary	Summarizes the most important successes and difficulties in implementing intervention components, and main changes observed in care delivery and clinical outcomes	
	Highlights the study's particular strengths	
Relation to other evidence:	Compares and contrasts study results with relevant findings of others, drawing on bread review of the literature; use of a summary table may be helpful in building on existing evidence	
Limitations:	Considers possible sources of confounding, bias, or imprecision in design, measurement and analysis that might have affected study outcomes (Internal validity)	
	Explores factors that could affect generalizability (external validity), for example: representativeness of participants; effectiveness of implementation; dose-response effects; features of local care setting.	
	Addresses likelihood that observed gains may weaken over time and describes plans, if any, for monitoring and maintaining improvement; explicitly states if such planning was not done.	
	Reviews efforts made to minimize and adjust for study limitations	
	Assesses the effect of study limitations on interpretation and application of results.	
Interpretation	Explores possible reasons for differences between observed and expected outcomes	
	Draws inferences consistent with the strength of the data about causal mechanisms and size of observed changes, paying particular attention to components of the intervention and context factors that helped determine the intervention's effectiveness (or lack thereof), and types of settings in which this intervention is most likely to be effective.	
	Suggests steps that might be modified to improve future performance	
	Reviews issues of opportunity cost and actual financial cost of the intervention.	
Conclusions	Considers overall practical usefulness of the intervention	
	Suggests implications of this report for further studies of improvement interventions	
Other information: Were other factors relevant to conduct and interpretation of the study?		
Funding:	Describes funding sources, if any, and role of funding organisation in design, implementation, interpretation and publication of study.	
Other		

Risk of Bias:

Newcastle-Ottowa Scale:

Domain	Question	Support for judgment	Number of stars
Selection	Representativeness of the exposed (max 1*) a) Truly representative of a health setting in that country* b) Somewhat representative of a health setting in that country* c) Selected group of users d) No description of the cohort		
	Selection of the non-exposed (max 1*) a) from same community as exposed * b) from different source c) no description		
	Ascertainment of exposure(max 1*) a) from secure record * b) structured interview c) written self report d) no description		
	Demonstration that outcome of interest was not present at start of the study a) yes* b) no		
Comparability	Comparability of cohorts on the basis of the design or analysis (max 2*) a) study controls for context* b) study controls for other factors *		
Outcome	Assessment of outcome (max 1*) a) independent blind assessment* b) record linkage* c) self report d) no description		
	Was follow up long enough for outcomes to occur a) yes at least 6 months* b) no		
	Adequacy of follow up of cohorts(max 1*) a) complete follow up* b) small number of subjects lost to follow up or one site* c) More than one site lost to follow up or large number of subjects. d) No statement		
Other comments:			
		Total Stars (max 9)	

Cochrane Risk of Bias tool:

Domain	Support for judgement	Review authors' judgement				
Selection bias				**Yes**	**No**	**Unclear**
Random sequence generation		Was the allocation sequence adequately generated?				
Allocation concealment		Was the allocation adequately concealed?				
Performance bias			Outcome	**Yes**	**No**	**Unclear**
Blinding of participants and personnel *Assessments should be made for each main outcome (or class of outcomes)*		Performance bias due to knowledge of the allocated interventions by participants and personnel during the study.				
Detection bias			Outcome	**Yes**	**No**	**Unclear**
Blinding of outcome assessment *Assessments should be made for each main outcome (or class of outcomes)*		Detection bias due to knowledge of the allocated interventions by outcome assessors.				
Attrition bias			Outcome	**Yes**	**No**	**Unclear**
Incomplete outcome data *Assessments should be made for each main outcome (or class of outcomes)*		Attrition bias due to amount, nature or handling of incomplete outcome data.				
Reporting bias						
Selective reporting		Are reports of the study free of suggestion of selective outcome reporting?				
Other bias						
Other sources of bias		Bias due to problems not covered elsewhere in the table.	Early stopping			
			Baseline imbalances			
			Assessors not independent from researchers			
			Post-hoc changes to the protocol			

Weight of Evidence:

Domain	Question	Comments	Judgment low/med/high
A	What is the quality of the study		
	What is the risk of bias in the study		
B	Is the research design appropriate for the review question?		
C	Does the available evidence answer the review question		
D	Does the study contribute evidence towards answering the review question?		

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Study ID	Participants	Setting	Methodology	Aim
Randomised Controlled Trial				
Ruhe 2011 (34)	Whole practice	Highly integrated healthcare system; a health care system emphasising independent practice and safety net practices caring for underserved populations, USA	Group randomised controlled trial with mixed methods practice development and process evaluation	To improve rates of delivery of preventive services and describe how an Appreciative Inquiry intervention can foster organizational growth at the practice level in primary care settings
Controlled Observational Studies				
Chen 2014(17)	Managers; clinical staff; allied health staff; social workers.	Three tertiary care psychiatric hospitals in Canada	Pre-test/post-test design	To develop and evaluate a mental health recovery education program tailored to the needs of inpatient providers.
Hussein 2014(8) Sharma 2015(9)	Hospital staff; state and district government officers	6 secondary and tertiary hospitals in Gujarat state India.	Longitudinal cohort study with qualitative study	To reduce puerperal infections.
Joshi 2007(18) & 2010(19)	Doctors; nurses; auxiliary staff including ward boys and sweepers	Maternity homes within the city initiative for newborn health, Mumbai	Case controlled before and after study	To change the attitude and behaviour of the healthcare staff of maternity homes and improve the perception of the facility by the women accessing the services.
Kavanagh 2010a (20)&2010b(21)	Nurse leaders; administrative: clinical and educational roles; staff nurses.	Surgical unit at a university affiliated paediatric hospital in Canada	Mixed methods case study	To examine the acceptability, fidelity and feasibility of using Appreciative Inquiry to implement pain management evidence in paediatric nursing practice
Moorer 2017 (49)	Hospital executives; patient experience team; front line staff	General private, non-profit hospital in Boston, USA	Before and after study	To improve patient experience
Page 2017 (50)	Staff from health board, carers and representatives of carer groups	Mental health service across North Wales	Before and after study	To develop a dementia care pathway
Shendell-Falik 2007(35)	Emergency department staff and those from the inpatient telemetry unit	Medical center with Emergency department and hospital in USA.	Before and after study	To improve results for the patients, the nursing staff and the hospital
Stefaniak 2007(22)	Nursing leaders; staff nurses	Quaternary full service acute care and teaching facility in the USA.	Before and after study	To address the issue of the low staff satisfaction with decision making in a national survey.

Supplemental material

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Wagh 2018 (52)	Medical officers, community mobiliser, health managers, district nucleus team, communicable disease officer	Eight blocks of four districts in Bihar India, covering about 2 million of the population	Before and after study	To reduce the number and of false positive diagnosis of leprosy cases	43 healthcare staff	Medium quality Medium risk of bias Highly relevant
Qualitative Studies						
Carter 2006 (15)& 2007(14)	Families; voluntary sector; community & hospital staff ; school staff; social workers	The agencies working with children and families with complex health needs in one area in the UK.	Qualitative study using Appreciative Inquiry methodology	To engage with families and agencies who are involved in working with children with complex needs; explore multi-agency working practice; enhance multi-agency working	69 people	High quality Highly relevant
Dewar 2010, (43) 2013 (44) & 2016 (45)	Registered and unregistered nurses; allied healthcare staff; medical staff; patients; families.	Inpatient clinical areas in a Scottish University hospital.	Appreciative action research	To explore, develop and articulate strategies that enhanced compassionate relationship centred care in hospital settings and establish compassionate care as an integral aspect of all nursing practice	35 staff 10 patients 12 family members	Low quality Highly relevant
Trajkovski 2015(16)	Nurses; parents; special care nursery staff.	Neonatal unit, Australia	Qualitative study using Appreciative Inquiry approach and thematic analysis	To enhance the uptake of Family Centred Care within a neonatal intensive care unit	9 nurses 6 parents	High Quality Highly Relevant
Yoon 2011(36)	Registered practical nurses; registered nurses.	Five complex continuing care units, Canada	Qualitative study using content analysis	To foster the development of new knowledge about "best" oral care practices, and implement best practice interventions	9 nurses	Low Quality Highly relevant
Non-Randomised Observational Studies						
Aggett 2013(23)	Child and adolescent mental health workers (CAMHS); administrative staff	CAMHS services across three boroughs in the UK.	Report of the workshop	To raise intra-personal and team responsiveness about clinical risk; reframe the attitude to risk and predict risk better.	Over 45 people at each event (3 events) with over a 90% take up.	Low quality Relevant
Alfred 2006 (37) & Hobbs 2004 (38)	Senior management; healthcare workers	Heart Centre in the UK	Report of intervention	Not clearly documented	40 staff plus 6 consultant colleagues	Low quality Relevant
Baker 2006(24)	Practitioners; Patients and families; managers; drug company reps	British society of paediatric gastroenterology, hepatology and nutrition.	Report of Appreciative Inquiry intervention	To develop the service	Meeting 1=37, Meeting 2=25, Meeting 3=31	Low quality Relevant
Brookes 2011 (39)	Staff from the paediatric medical ward; consultant reps; chief executive	Paediatric medical ward in the UK	Report of organisational development intervention.	To improve patient care and job satisfaction whilst transforming the ward into a place they would want their own children to be cared for.	Not specified	Low quality Relevant
Buck 2017 (40)	Nurses from float pool	Clinical float pool	Local initiative, project report.	To determine if Appreciative Inquiry could provide a framework for improving sense of community and if so whether a heightened sense of community would lead to improved intent to stay employed.	23 nurses	Low quality Relevant
Campbell 2013 (25)	Primary care nurses	Non-academic cancer center in Canada	Report of organisational change initiative	To explore the practices of oncology primary care nurses that gave them job satisfaction; to build on those positive practices and enhance our model of nursing care	7/8 nurses participated	Low quality Relevant
Carter 2007 (26)	Physicians; medical assistants; office manager; Admin staff.	A family practice in a small community in the USA	Case study	To increase the financial margin at a small community family practice.	21 invited 17 got involved in the action groups	Low quality Relevant
Challis 2009 (46)	Nurses	200 bed acute care facility in the USA	Report of local project with some longitudinal data	Reduce turnover of nursing staff	33 involved at the meetings with opinion sought from a further 48 via questionnaires.	Low quality Relevant

Clarke 2012 (47)	Nurses; ward clerks; managers; home care coordinators; allied health workers; patients.	Tertiary teaching hospital in Canada	Quality improvement project	To examine what goes right in handoffs and build on these strengths to improve them.	29 participated in appreciative interviews. Unclear how many staff attended the workshop	Low quality Relevant
Clossey 2011 (27)	Midlevel agency administrator; direct care staff; clerical staff	Two mental health agencies in the UK.	Case study	To implement a recovery programme.	Not reported	Low quality Relevant
Guliar 2001 (48)	Primary care doctors and nurses; secondary care professionals; patients	Primary care group (PCG) and 5 neighboring practices in the UK	Report of local improvement process	To improve the organization of primary care diabetes care by developing more protocol driven and nurse-led approaches and accelerating the development of registers and templates in practices.	22 attended the meeting	Low quality Relevant
Halm 2018 (51)	Magnet champions and practice council members	A hospital and associated clinics based in the USA	Quality improvement project	To greater embrace professional practice	Not clear	Low quality Relevant
Havens 2006(28)	Chief Nursing Officers; site coordinators; staff nurses	6 community hospitals in nursing shortage counties in the US	Action research project	To improve interprofessional communication and collaboration, enhance staff nurse involvement in organisational and clinical decision making, and to enhance cultural awareness and sensitivity toward patients, families, and other staff, disciplines and departments.	Unclear number of people involved	Low quality Relevant
Jaccai 2008 (29)	Management; clinical staff; patients; residents; affiliated communities	Community based healthcare system in USA	Report of local improvement process	To provide the best possible services to patients and it focused on three objectives - Creating a high performing organisation - increasing improvement capability - developing and opportunity focused workforce engaged in positive change.	75 people in a three day leadership summit followed by 394 participants in the 'system wide summit'	Low quality Relevant
Lazic 2008(31) & 2011(30)	Nurses	Haemato-oncology department of the university children's hospital Serbia.	Case study of Appreciative Inquiry implementation project	To work together across the professions to improve knowledge and understanding of children's cancer care	18 nurses	Low quality Relevant
Mash 2008 (41)	Clinical staff facility managers; health promoters involved in chronic care	15 community health centers around the Metropolitan Cape Town area.	Report of a local Appreciative Inquiry process	To explore how the annual review of the diabetic patient could be improved	Unclear but at least 19 from 10 healthcare centres.	Low quality Relevant
Messerschmidt 2008(32)	Joint staff/ community stakeholder workshops	A women's health project in 4 districts and a Safer motherhood project in 9 districts in Nepal.	Evaluation of wider set of projects	To change attitudes and improve accountability of health professionals, encourage greater involvement of community, and increase utilisation of reproductive health care services by pregnant women	Not stated	Low quality Relevant
Reed 2002(33)	Older people's, hospital and community trusts; local authority; voluntary and private care sector.	The whole system involved in hospital discharge, UK	Action research with thematic analysis of the interviews	To improve the process of going home from hospital.	37 different organisations represented at first meeting, 55 people attended the final meeting	Low quality Relevant
Seebohm 2010 (42)	Carers; service users; managers; practitioners; local authority; volunteers	Mental health of older adults directorate in London based NHS trust	Report of Appreciative Inquiry process	To increase the social inclusion and voice of older people with dementia or mental health problems and their carers	12 people In the core design group, 60 involved in the appreciative interviews 120 in the stakeholder meeting	Low quality Relevant