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Systematic review of studies of mental health nurses' experience of anger and of its' relationships

with their attitudes and practice

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Accessible Summary

What is known on the subject:

- It is generally felt that it is helpful for mental health nurses to control their emotions during their work. There are different approaches but there is growing acceptance that different emotions may need different coping strategies.
- There is lots of evidence that nurses sometimes feel anger in a number of situations but the research about anger in mental health nurses has never been examined as a whole.

What the paper adds to existing knowledge

- We have systematically identified all previous research where nurses completed measures that tried to measure their anger in certain situations, compared it to other people, or investigated how it affected them or what its' relationship was with their practice.
- Only a few studies have measured nurses' anger. However, it seems that while nurses are not generally angrier than any other group they do often feel anger in relation to management of patient aggression and their job situation more generally.

What are the implications for practice:

- Anger is the most commonly reported problematic emotion for mental health nurses. It may influence their practice and affect their wellbeing. This has implications for staff support and training.

Abstract

Introduction

Emotional regulation is important in mental health nursing practice but individual emotions may require different regulation strategies. There is ample evidence that nurses experience anger specifically during their work, for example when experiencing patient aggression. It is, therefore, important to consolidate what is known about how anger manifests in mental health nursing practice.

Aim

We aimed to systematically identify, evaluate, and synthesise results from studies about mental health nurses and anger, where anger was measured objectively.

Methods

Systematic literature review based on PRISMA guidelines.

Results.

We identified 12 studies. A range of validated and non-validated instruments were used. Mental health nurses may have lower levels of anger than normative samples but anger is commonly reported as an issue for them. Anger was studied in relation to its links with i) clinical management of patients, notably violence containment; and ii) employment issues more generally, notably job motivation. Anger is related to nurses' attitudes about the acceptability of coercion but there is no evidence that it results in more coercion.

Implications for practice

Nurses should be aware of the potential influence of anger on their practice. Anger, specifically, should be considered when supporting mental health nurses, for example in clinical supervision. Emotional regulation training should target anger.

Relevance statement

There is ample evidence that anger can be an issue for mental health nurses. Further, anger can have deleterious consequences for nurses and potentially for patient care. Nurses spontaneously report experiencing anger in surveys and qualitative studies. In this review we have systematically gathered and evaluated those studies which have investigated anger in mental health nurses and its relationships with all relevant reported outcomes using defined measures. The review has clear relevance to mental health nursing practice, education, and informs future research.

Introduction

The term "emotion" is commonly understood to refer to pleasurable or unpleasurable internal feelings or states of varying intensity and directedness (Scrist, 2011). However, in scientific parlance it has no generally accepted single definition. Researchers commonly agree that emotion comprises structural aspects (neural systems, response systems, feelings or feeling state) and functional aspects (recruits response systems, motivates cognition and action, organizes, orders and coordinates responses, and monitors or assesses the significance of events), but there is less agreement about the extent to which it incorporates elements of cognition and cognitive appraisal (Izard, 2010). Use of the related concept "emotion regulation", or how we attempt to "influence the emotions we have, when we have them, and how we experience and express [them]" (Gross, 2015a: p.497), has grown considerably from its inception in the 1990s, and is an active topic of investigation across multiple academic fields and disciplines (Gross, 2015b). Deficits in emotional regulation have been linked to the incidence of deliberate self-harm (Gatz & Roemer, 2008) and aggression (DeWall et al., 2007). In mental health, conditions including borderline personality disorder, depression, and substance misuse have been reported to be associated with emotional dysregulation (Berking & Wupperman, 2015). Further, emotional self-regulation has been proposed as central to the practice of mental health nursing (e.g., Bowers, 2014; Mann, 2005), most specifically in the management of

patient aggression and conflict (Bjorkdahl et al., 2013). It is suggested that nurses' characteristics, including their ability to regulate their emotional state, can, in inpatient settings, impact upon their implementation of the ward routine and the rules of patient conduct, and therefore have the capacity to influence the frequency of conflict and/or containment episodes (Bowers, 2014). Further, it has been proposed that a nurse's own negative emotion can accentuate a patient's emotional regulation ability, thereby hindering the nurse's ability to respond in the most effective and socially skilled way. Indeed, this is supported by a study that indicated nurses' anxiety and fear increased their propensity to use seclusion to manage aggressive incidents (Parkes, 2003).

An important aspect of contemporary emotion-focused research is the developing consensus that the all-encompassing term "emotional regulation" is insufficiently specific because regulatory processes may differ for individual emotions (Izard, 2010). Emotion-researchers have classified emotions in numerous ways, with differences seemingly arising from disputes about whether distinct emotions should be identifiable from facial expressions (e.g., Ekman, 1993; Plutchik, 1980; Barrett, 2006). Nevertheless, most theoreticians agree that basic emotions include anger, fear, disgust, happiness, sadness, and surprise.

Rationale

Mental health nurses have reported that they experience anger and related emotions (hostility, provocation) in a range of scenarios. Most commonly this is in relation to experience of aggression and violence by patients (Biggin et al., 2011; Bimenyima et al., 2006; Bonner, 2012; Bowers et al., 2007; Lanza, 1983; Lu et al., 2007; Murray & Snyder, 1991; Ryan & Poster, 1989; Sequeria & Halstead, 2004), but anger has been reported in a range of scenarios including as a response to working with people with symptoms of psychosis (Engqvist et al., 2009; Katsuki et al., 2005), or personality disorder (Reiss & Gannon, 2015), and with non-compliant patients (Loukidou, 2008); work-related boredom (Loukidou, 2008); whistleblowing (McDonald & Ahern, 2006);

institutional loss, i.e., grief at hospital closure (Massey, 1991); when caring for sexually abused children (Spinelli et al., 2011); and following a colleague's suicide (Thompson & Brooks, 1990).

From a human evolutionary perspective, anger, like other emotions, has been shaped over millennia by its relative utility in terms of solving problems that are, however indirectly, related to reproductive success; hence, anger may well be an adaptive response in situations involving, among others, issues related to intrasexual mate competition, mate retention, status gain or loss, kin protection, or food acquisition (Al—Shawaf et al., 2007). Further, expressions of anger can, perhaps even primarily, be understood as adaptive; for example, expression of anger can help individuals achieve their personal, social-related goals, e.g., by facilitating focus (Butler et al., 2003; Gross & John, 2003). The utility of nurses' anger in the therapeutic mental health nurse-client relationship is more doubtful. There is, of course, a long history of the acknowledgement of uncomfortable emotions in psychotherapist-client relationships including anger and hate by professionals. Winnicott (1949: p.70) wrote that therapists "must not deny hate that really exists in himself", and the related literature claims that not only are such feelings understandable, but failure to acknowledge them can be harmful, and their acknowledgement and use in the therapeutic relationship can, in certain circumstances, be clinically useful (Pope & Tabachnick, 1993). While mental health nurses might usefully reflect on their experience of strong negative emotions during the course of their work, it is more difficult to understand how anger might be adaptively expressed in scenarios in which it is commonly experienced, most notably in episodes of patient aggression or physical restraint. In such circumstances, it may be that what is required is the *control* of that anger rather than simply its' *experiencing* (Bowers et al., 2014). This notion is consistent with Hochschild's (1983) distinction between 'deep acting', i.e., managing one's feelings, and 'surface acting', managing the expression of behaviour in emotional labour. To our knowledge, there have been no published reviews specifically on the phenomenon of anger in mental health nurses and mental health nursing. While Needham et al.'s (2005) review of non-somatic affects of patient aggression on mental health nurses covers some overlapping ground it does so from the perspective of patient

aggression. There is a lack of understanding about how nurses' anger is manifested in their clinical practice more broadly in psychiatric settings.

Objectives

In this context, we conducted the current review to explore existing empirical research related to investigation of mental health nurses' anger. Given current thinking about i) the centrality of emotion-regulation to mental health nursing practice; and ii) the need for more specificity about individual emotions in research, we anticipate that a focus on anger specifically has the potential to lead to new insights for practice, education, and research in the field. We have used the following definition of anger as a multifaceted construct as our starting point: a subjectively experienced emotional state that involves physiological, cognitive, and behavioural dimensions that may characterise as a state or trait manifestation, and which could be influenced or reinforced by social factors (DiGuiseppe & Tafrate, 2007). However, we aimed to include empirical research that investigated and measured mental health nurses' anger using any explicit definition. As such, the review addressees the primary question whether, in mental health nurses, exposure to clinical practice associated with anger.

Methods

Design

A systematic literature review in accordance with relevant sections of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement (PRISMA; Moher et al., 2009).

Eligibility criteria

The specific review question is: In mental health nurses, is exposure to clinical practice associated with anger? Secondary questions relate to what reported levels of mental health nurses' anger mean in the context of published normative data; which specific features of exposure to practice are associated with anger; and identification of any relationships between anger and other outcomes.

Information sources

We searched multiple computerised databases (EMBASE, Medline, PsycINFO, CINAHL, and Google Scholar).

Search

We used combinations of the terms: Anger, Hostility, Aggression, Violence, Inpatient, Psychiatric, Hospital, Ward, Mental. 'Wildcard' searches (truncated terms ending in '*') were utilised to maximise the breadth of the search, from inception of electronically available articles to 2017. The search was supplemented by hand searching of references lists and of selected mental health nursing journals.

Study selection

Studies were eligible for inclusion if they reported on empirical research about anger in nursing staff working in psychiatric/mental health settings. The inclusion criteria were not limited by study design. Studies were excluded if: they were non-empirical (e.g., reviews or theoretical accounts); anger was not measured; the study sample comprised a majority of staff other than nurse professionals; written in non-English language. Finally, studies were excluded where anger was

reported as an outcome but was not a priori specified as the primary focus of the study, for example studies in which staff reported feeling angry in some type of situation but this was not a specified objective.

Data collection process

Included papers were scrutinised by both authors independently and information gathered using a data extraction sheet.

Data items

For each study, information about the country, study setting, sample, design, study methods (including anger measures utilised), results and authors' conclusions was extracted independently by the two reviewers (see Table 1). Results were compared and, where disagreements arose, were resolved by discussion.

Risk of bias in individual studies

Study quality was assessed against criteria suggested by Jackson et al., (2006), please see Table 2 for details. The appraisal checklist criteria, recommended by National Institute for Health and Care Excellence (2012), is specifically designed for quantitative studies, reporting correlations and associations; thus, this was deemed appropriate for studies included in the review. Checklist criteria cover five domains: population, method of selection, outcomes, analyses, and summary against which individual study quality is assessed. Because of the limited number of studies we did not exclude studies based on methodological quality. However, our interpretation of results was explicitly informed by our understanding of each study's particular strengths and limitations.

Data analysis

Included studies used heterogeneous methods and measures and it was not possible to synthesise the results via meta-analysis. Instead, a narrative approach was taken to study synthesis (Popay et al., 2006). Descriptive statistics were employed to examine the definition of anger used, samples studied, quality, nature, and geographic distribution of studies. Where data from anger measures were presented we attempted to locate published normative data to examine whether there was evidence that mental health nurses have levels of anger similar to or different from samples for whom this was known. Other information was organised thematically, discussed, and agreed by the authors.

Results

The search strategy resulted in identification of 12 studies for inclusion in the review (see flowchart Figure 1).

Study characteristics

None of the included studies explicitly provided an operational definition of anger though those measuring anger using validated tools did so implicitly (see Table 1). Other study characteristics are presented in Table 3. Nine (75%) studies were published from 2000 onwards. Studies were conducted in eight countries: UK (k = 4), US (k = 2), China (k = 1), Canada (k = 1), Japan (k = 1), Iran (k = 1), Australia (k = 1), and Turkey (k = 1). Ten studies had recruited nurses from a psychiatric hospital setting; one study recruited nurses from a university setting who have been exposed to psychiatric inpatient services as part of their training; one study recruited randomly from active registrants listed on a nursing regulatory board member list. The total number of participants totalled 1,471; job titles of the nurses included in studies varied and included psychiatric nurse, student psychiatric nurse, rehabilitation instructors, and nurse's aides. Of the 1,471 participants, 314 were female and 146 male; gender was not reported for the remaining 1,011 participants. Other

information including age, ethnicity and years of experience were unreported or inconsistently reported. No attempt to operationally define anger as a multidimensional concept was detected; however, all included studies used some form of data collection instrument. Examination revealed that anger was measured either as an emotional/affective dimension or an experience and/or expression dimension.

Risk of bias within studies

In terms of risk of study bias, all studies (k = 12) were appraised as meeting some of the checklist criteria and, where they have not been fulfilled or not adequately described, the study conclusions were judged as unlikely to alter (see Table 2). In examining the 12 studies, common items which persisted as potential risks of bias related to the study population (inadequate descriptions of demographic characteristics; poorly defined recruitment and inclusion criteria; unclear response rates); the measures used (few indications of the psychometric properties of measures used (see Table 3); items largely based on recall; and data analysis (no sample size calculation; multiple testing; descriptive statistics only).

Narrative synthesis of results

Nurses' reported anger and normative data. No study included a control group of non-mental health nurses. No study whose participant sample was multidisciplinary and in which anger was measured, presented separate figures for nurses. Engin and Cam's (2006) study reported mental health nurse participants to have lower trait anger levels than published State-Trait Anger Expression Inventory norms for 12 to 18 year olds (Brunner & Spielberger, 1997: 448). Those studied by Kouchaki et al., (2016) had a mean Multidimensional Anger Inventory (Siegal, 1986) item score of 3.01, while published norms for college students (1.89) and factory workers (1.80) were considerably lower indicating much less anger. Nurses studied in Jalil et al.'s (2017) research reported lower levels

of anger and provocation than published norms from 1,546 individuals (age range 9 to 84 years) from non-clinical settings (Novaco, 2003).

Anger and clinical management of patients. Four studies (Engin & Cam, 2006; Lanza, 1983; Lu et al., 2007; Ryan & Poster, 1989) explored nursing staff anger in response to patient aggression. Lu et al., (2007) and Ryan and Poster (1989) reported anger to be the most common reaction to aggression among nurses. Further, Lanza (1983) reported that, as an emotional reaction to patient assault, anger was generally short-lived, but in a minority of cases was a longer–term response. The result of nurses being or becoming angry are notable; Engin and Cam (2006) reported correlations between aggression, job motivation and anger such that patients' aggressive behaviours interference with routine nursing tasks was associated with the most anger. In fact, the authors suggest that anger resulting from patient aggression might not be the result of the aggression per se, but might arise as a result of the additional clinical *and* administrative burden.

Two studies which investigated containment techniques (e.g., physical restraint and/or seclusion) for patient aggression also reported on nursing staff anger. Of these, one investigated nurses' involvement in actual incidents of containment (De Benedictis et al., 2011), and the other (Jalil et al., 2017) investigated attitudes towards use of *and* actual incidents of containment. Both studies revealed a positive association between levels of nursing staff anger and the approval level for coercive containment measures, and, to an extent, greater use of containment. Specifically, De Benedictis' study revealed that the perceived level of anger and aggression within the nursing team, and the level of perceived exposure to patient self harming behaviour, were both associated with greater use of seclusion and restraint. De Benedictis et al., (2011) used the Group Environment Scale (GES), a measure of team climate (Moos et al., 1973); as a result, the researchers interpreted the results as a reflection of perceived anger among team members in general rather than a self-report of respondents' own individual anger level.

Jalil et al's (2017) was the only one of these studies to use a validated measure specifically of anger (the Novaco Anger Scale and Provocation Inventory; Novaco, 2003). Results supported the presence of a positive relationship between measured anger and approval of physical restraint - but not seclusion - as a containment measure. The relationship did not persist when interrogated in regard to a link to actual use of either of these containment measures. In terms of exposure to patient aggression, Jalil et al., (2017) report no relationship between anger and either witnessing self-harm behaviour or being the target of physical aggression. However, there was a significant relationship between anger and a subset of POPAS items that were revealed in principal components analysis to constitute humiliating, personally directed, verbally aggressive behaviours.

Forsyth's (2007) study used vignettes to experimentally detect significant differences in attitudes to people described as having either borderline personality disorder or major depressive disorder. Details about a patient who failed to complete a therapy task were constructed with details about diagnosis, controllability/uncontrollability (reason for non-completion is because the patient/therapist has cancelled a planning session respectively), and stability/instability (cancellation is a regular/one-off occurrence respectively). Responses to vignettes, captured on the empathy scale (Burns & Nolen-Hoeksma, 1992), are described in terms of the scales' subscales: anger, empathy, and helping behaviour. Results revealed a significant main interaction effect for controllability in terms of anger; i.e., when nurse respondents perceived the reason for task non-completion to be controllable by the patient they were more likely to report anger towards him. This did not differ in terms of diagnosis and was not modified by perceived stability.

In another vignette study (Urquhart-Law, et al., 2009) presented 'Mary', a 15-year old female who self-harms by cutting her arms with a sharp instrument. Conditions of controllability/ uncontrollability were manipulated through randomisation of attribution by stating the 'cause' of the self-harm as either 'abuse' or 'drug misuse' in equal proportions. Anger, as measured on a 3-item subscale of the Attribution Questionnaire-24 (Corrigan et al., 2001), was significantly associated with belief that 'Mary' was responsible for her self-harm (i.e., drug abuse condition); further, it was also

associated with a reduced reported willingness to help due to a perception that the behaviour was manipulative.

Anger and job/employment issues. The relation of anger to job motivation among 50 nurses working in psychiatry in Iran has been investigated by Kouchaki et al., (2016) who reported a significant negative relationship: i.e., those reporting more anger reported less job motivation. Possible confounders, that is other significant covariates, included number of family members and conditions of employment.

Engin and Cam (2006) explored relationships between job motivation and trait anger among psychiatric nurses in Turkey; a significant negative correlation was found between job motivation and suppressed anger, and a significant positive correlation between job motivation and anger control. This suggests that suppression rather than expression of anger, and lack of control over anger, are associated with poorer job motivation.

Katsuki et al. (2005) surveyed 189 psychiatric nurses in Japan on a revised measure of expressed emotion (EE) the Nurse Attitude Scale. Principal components analysis of responses revealed a three-factor structure, one of which, the 6-item 'hostility' subscale (e.g., 'I feel that he is driving me crazy') had good internal reliability and test-retest reliability. Participants also completed the Pines' Burnout Scale (Pines et al., 1981). Hostility was positively correlated with burnout, though was more strongly correlated both with the 'Criticism' and 'Positive remarks' subscales. The authors conclude that these results make sense because burnout and patient-directed emotional attitude would reinforce one another circularly and thus that the Nurse Attitude Scale has concurrent validity. They note, however, that theirs is the first empirical demonstration of this.

Two studies examined mental health nurses' anger without examining its relation to either patient containment or job motivation. McDonald & Ahern (2002) investigated the physical, emotional and practical outcomes of whistleblowing on a colleague in relation to misconduct at work by surveying mental health nurses and comparing the responses of those who had and had not been a whistleblower. Anger-related questionnaire items related to whistleblowing causing conflict with other, short-temperedness and thoughts of retaliation, and family problems. Small differences in proportions were reported, but not in any consistent direction; statistical significance was not presented. At 67%, anger was the most commonly reported response to misconduct at work irrespective of whistleblowing status.

Massey (1991) investigated the emotional responses of 22 nursing staff who had recently learned that the psychiatric hospital in which they worked, or had worked in the past, was to be closed. The study's stated aim was to examine grief reactions, of which anger was expected to be one. Some participants had secured new positions but others had not. Strikingly, it was deemed that "prior knowledge that grief was being examined would have invalidated the research" (p. 575). Emotional reaction was judged by observation, a visual analogue 'feelings line', and a form presenting 10 partial sentences (e.g., "My feelings when I knew that [the hospital] was closing were...") that they were asked to complete. Comparisons between those still working in the hospital and those who had previously worked there but were now employed in community services were made. The most common reaction to the example sentence was 'Denial/disbelief' (50%), while 'Anger/resentment' was reported by five (22.8%) participants, four of whom were hospital-based. Of the eight hospital-based nurses who had yet to secure an alternative position, three (37.5%) reported feelings of 'Resentment/anger'.

Discussion

We aimed to identify and integrate findings from anger-related research in which the participants were mental health nurses. We examined the extent, range, and nature of existing empirical research that a priori investigated nursing staff anger. Organisation of study aims and findings revealed two main themes: i) anger related to patients and their clinical management; notably, but not exclusively, patient aggression and its containment; and ii) anger related to aspects of employment, most commonly, but not exclusively, job motivation. One study (Engin & Cam, 2016) drew together these two themes: noting links between anger, burnout, and aggression. Findings of this review are consistent with Needham et al's (2005) review of the non-somatic effects of patient aggression on nurses (in psychiatric and medical settings) where anger was experienced along with other emotions as a consequence of inpatient aggression. It also highlights that anger may be a relevant factor in other scenarios unrelated to patient aggression. By collating studies that have attempted to define and quantify anger, we have demonstrated that the evidence is consistent with a wide range of qualitative and survey studies which set out to explore nurses' reaction to a number of scenarios or circumstances but did not dictate a priori that anger be one of those reactions, did not operationally define anger, nor make any attempt to measure it (Biggin et al., 2014; Bimenyima et al.,2006; Bonner, 2012; Engqvist et al., 2009; Murray & Snyder, 1991; Reiss & Gannon, 2015; Sequeira & Halstead, 2004; Spinelli et al., 2011; Thompson & Brooks, 1990).

As a result, it is safe to conclude that anger is a relevant factor for mental health nurses with regards to their own wellbeing (Lu et al., 2007; Ryan & Poster, 1989). However, this does not appear to begin from a position of mental health nurses themselves having high levels of anger. In fact, nurses in two included studies (Engin & Cam, 2006; Jalil et al., 2017) scored lower (less anger) on the respective instrumentation used than normative samples. A third study (Kouchaki et al., 2016) suggested considerably higher anger scores for nurses than published norms. We cannot account for this but note that the authors themselves do not comment on this surprising finding. Further, while the study was conducted among nurses working in psychiatric wards in Iran, we suspect the sample

characteristics may not correspond to more typically western mental health nurses since 40% of their sample were employed on obstetrics and gynecology (OBGYN) wards.

Further, anger appears relevant to nurses' related preparedness to use physical restraint and/or seclusion as containment measures (Jalil et al., 2017; De Benedictis et al., 2011), though whether this manifests in practice has not been definitively proven (Jalil et al., 2017). Deans' (2004) qualitative study of non-mental health nurses with experience of assault found that anger was embedded in a state of emotional confusion resulting from their being unprepared to cope with anger, and unwilling to talk about it in any event. This is of concern for nursing staff wellbeing, and potentially for employers in terms of the care quality provided by nurses. How nursing staff anger is subsequently manifested in, or impacts on, their work is difficult to ascertain. What is apparent that there is little point using further valuable research resources trying to determine whether mental health nurses experience anger, or even making such speculative attempts to explain it. What is required is a far greater emphasis on studying anger within a positivist framework, i.e., using operationally defined variables and examining relationships between them. 'Anger' describes a range of affective, cognitive and behavioural elements and there is limited value in conducting further research which does not do so within a theoretical framework.

The issue of therapeutic alliance between nurse and patient and the role of anger has been previously highlighted (Sequeira & Halstead, 2004). The intense feelings nurses may hold toward patients as a result of aggression could potentially affect their relationship. In particular, the use of physical restraint and/or seclusion is an indicator of care quality (Sacks & Walton, 2014). This issue of care quality is consistent with Arnetz and Arnetz's (2001) who found that patients reported poorer care quality was received from previously assaulted nurses. If nurses' willingness to use or actual use of these interventions is truly linked to anger then effective steps to help nurses deal with anger could result in better care quality.

In terms of mental health nurses' anger-related reactions to patient aggression and containment of aggression, study authors felt that support from colleagues and the employing organisation could prevent or even minimise the experience of anger. Murray and Snyder (1991) found that a consultation service was helpful for nursing staffs' reactions to patient assault. Such support may address issues concerning nurses' perceptions of professional incompetency, expectation to cope, and emotional confusion that may arise as a result of patient aggression (Deans, 2004). Not only can this form of support address nursing staff wellbeing, but it may also have a positive effect on job motivation (Engin & Cam, 2006) and thus benefit the employing organisation at a service level; and in terms of attitude toward patients and work tasks (Arnetz & Arnetz, 2001). Further, reduced levels of anger among staff could enhance team climate to create a sense of security, as well as help re- balance the use of less coercive containment methods for patients and the need for physical restraint/seclusion (De Benedictis et al, 2011).

This review has highlighted that, despite claims about the importance of anger in mental health nursing practice, a standardised, validated anger measure has only previously been used in a limited number of studies (Engin & Cam, 2006; Jalil et al. 2017, Kouchaki et al., 2016). This seems to be due to a dearth of studies which aim *primarily* to investigate nursing staff anger, a failure to operationalise their working definition of anger in line with contemporary evidence of it as a multidimensional phenomenon (DiGuiseppe & Tafrate, 2007), and inconsistent anchoring of measurement on one or more defined dimensions. It is thus difficult to ascertain the precise nature of any association between nurses' anger, incidents of patient aggression, and the use of coercive containment methods. This reinforces Needham et al's (2006) suggestion that further research using standardised instrumentation could improve theory around the specific effects of patient aggression on staff, and also how this may then be related to use of physical restraint and/or seclusion.

Limitations

The methodological quality of studies indicated that they were descriptive and limited to quantitative, self-report, cross-sectional survey designs. Completion rates of measures were mixed; however, the psychometric properties of measures used were inadequate overall, and there was little consistency across studies in the anger measures used. This makes it difficult to establish any associations between nursing staff anger and other study variables. Also, the outcome measures required nursing staff to recall incidents which may have been subject to inaccuracies. In other studies, nursing staff were recruited on the basis of recorded assault incidents. However, it is possible that involvement in unrecorded assault incidents or in, for example, verbal aggression may have excluded nursing staff who would have otherwise been eligible to participate.

This review has identified the ways in which mental health nursing staff anger has been studied and in what contexts it has been identified as an issue (i.e., reaction to patient aggression, containment of patient aggression, and level of job motivation). It is evident that nursing staff anger is an issue in psychiatric/mental health settings internationally. Studies in the review, however, did not report consistently or analyse the demographic characteristics of nurses; thus it is difficult to know whether there are systematic patterns in the role of anger within the nursing population e.g., by gender or age. It is thus important that future studies are demographically representative of the nursing population and standardised anger measures are used, rather than proxy measures.

Conclusions

Further research is required to examine patient aggression and use of coercive containment methods in mental health settings and their relationships with staff anger and other emotions. Nurses experience anger amongst other emotions, but there is a dearth of evidence based on standardised anger measures to state with confidence that an association exists. Given that experiences of anger can affect wellbeing and subsequent care quality provided by nurses, it is

important to determine whether actual, rather than just approval of, use of coercive containment methods are predicted by nursing staff anger. Further, it is also important to understand whether the type of relationship between nurses and patients is predictive of aggressive incidents.

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Table 1: Characteristics of included studies

Study	Participants	Setting	Study aim	Design	Results	Authors' conclusions
De Benedictis et al (2011)	309 staff (nurses, rehabilitation instructors and nurse's aides)	Eight general and forensic psychiatric hospitals, Quebec	Examined whether staff perceptions of factors related to the care team and violence on the ward predicted use of seclusion and restraint	Cross-sectional survey	Correlational. Greater expression of anger and aggression among staff members and perception of a higher level of self-harm among patients significantly predicted of greater use of seclusion and restraint	Appropriate management of anger and aggression creates a sense of security and can help reconcile the balance between therapeutic interventions and the need to control patients
Engin & Cam (2006)	378 psychiatric nurses, M age 35 years, M years experience 14 years	Nine psychiatric hospitals, Turkey	Determine the correlation between the level of anger and the job motivation of nurses	Cross-sectional survey	Correlational. Negative correlation between job motivation and suppressed anger	Behaviours that cause the most anger: inadequate resources and conditions, unclear team relationships and roles, and patients' aggressive behaviours
Forsyth (2007)	26 mental health staff (14 registered nurses, 9 support workers, 3 unknown). M age 38.9 years; M experience 7.7 years.	One acute inpatient mental health service. UK	Identify whether participants' emotional reactions and intended helping behaviours differ by diagnosis, perceived controllability and stability.	2x2x2 repeated measures factorial design.	Main effect for workers to be angrier when causes were perceived as due to controllable factors; but for both patients with personality disorder and depression.	Need to develop reflective frameworks to articulate and understand the emotions that mental health workers may experience
Jalil et al (2017)	68 psychiatry nurses (71% females), M age 41 years, 74% > 2 year experience	Three psychiatric hospitals, UK	Explore relationships between anger, exposure to patient aggression, attitudes to, and use of, containment	Cross-sectional survey	Humiliating patient aggression related to nursing staff anger, Approval of restraint related to nursing staff anger	Education and training in prevention of violence must consider the role of nursing staff emotion.
Katsuki et al (2005)	189 psychiatric nurses (76% female; 47% registered; M experience 12.7 years)	Two psychiatric hospitals Japan.	Test a measure of expressed emotion (EE) the Nurses Attitudes Scale.	Cross-sectional survey .	Analysis revealed three factors including 6-item 'Hostility' which was correlated with a measure of burnout.	Results suggest that the NAS represents an approximation of the EE of psychiatric nurses.
Kouchaki et al (2016)	50 psychiatry nurses (50% male); <10 to >20 years experience.	Single hospital, Iran.	Evaluate relationship between anger and job motivation	Cross-sectional survey	Significant inverse relationship between s anger and job motivation , and between anger and conditions of employment	Approaches to manage anger should be included in training for psychiatric nurses.

Study	Participants	Setting	Study aim	Design	Results	Authors' conclusions
Lanza (1983)	40 nurses (58% nursing assistants), *M* age 38 years, *M* experience 6 years	Psychiatric wards, US	Determine the type of emotional, cognitive, social, and bio-physio-logical reactions that nursing staff experience due to physical assault	Cross-sectional survey	High 'no response' rate on questions about emotional reactions. Anger as a emotional reaction was a short and long term reaction	High 'no response' rate a result of an actual lack of reaction or inability to admit to the reaction themselves?
Law et al. (2009)	157 students (39 nursing plus medical, clinical psychology, physics/astronomy; 61% female	Two universities (UK)	Explore how healthcare and non-healthcare students think and feel about vignettes describing adolescent self-harm behaviour.	Cross-sectional survey	Medical students > others rate a young person as responsible for their self-harm and reported higher feelings of anger towards them. Anger associated with attribution of manipulatory intent and reduced willingness to help.	Implications of anger should be considered when develop-ing staff and services.
Lu & Liu (2007)	106 psychiatric nurses , *M* age 29, *M* years of experience 5.2	Two psychiatric hospitals, Taiwan	Evaluate the reaction of psychiatric nursing staff to assaults by patients and examine factors relevant to the nurses' reactions and perceptions	Cross-sectional survey	"Anger" was the most common emotional reaction. Nurses expressed discomfort in caring for patients who assaulted them	Essential to assure that nurses' feelings were satisfactorily addressed with adequate empathy and the availability of sufficient support from staff
McDonald & Ahern (2002)	95 registered nurses drawn from a computer generated sample of 500 (250 mental health nurses).	Nurses registered with Nurses Board of Western Australia.	To explore the health effects of whistleblowing and non-whistleblowing.	Cross-sectional survey	Anger was the predominate emotion reported by nurses in this study when they blew the whistle. 66% of whistleblowers and 72% of non-whistleblowers experienced anger. More whistleblowers reported feeling bitter and cynical, while more non-whistleblowers felt anger and had thoughts of retaliation.	It is recommended that nurse-whistleblower support networks be established in local areas to provide guidance for others engaged in the process of reporting misconduct.
Massey (1991)	22 mental nurses	One hospital due for closure in 15 months, UK	Explore grief at the impending closure of the hospital	Cross-sectional survey/ qualitative elements	Anger/resentment reported by 5 (23%) participants.	Nurses experienced a grief reaction at institutional loss.Additional support should be available for nurses in this position.
Ryan & Poster (1989)	61 nurses, 63% over 5 year experience	Neuro-psychiatric hospital, US	Describe the emotional, cognitive, social, and bio-physiological short-and long-term reactions of nursing staff to physical assaults	Cross-sectional survey	The highest number of moderate to severe responses were reported for emotional and bio-physiological categories. Most common reaction emotional response was anger, which was experienced by 40% to 50% of sample	Discussion should be provided to non-injured staff who are participants in or observers of an assault incident

Table 2: Nursing staff anger: quality appraisal of studies

	Population			Method of selection						Outcomes				Analyses				Summary	
	Source	Eligible	Selected	Exposure bias	Theoretical basis	Contamination	Confounders	Applicable setting	Reliable	Complete	Assessed	Follow-up time	Meaningful	Powered	Multiple variables	Appropriate	Calculable	Internally valid	Externally valid
Lanza (1983)	+	+	+	-	++	NA	-	+	NR	+	NA	NA	NA	NR	+	NR	NR	+	+
Ryan & Poster (1989)	+	++	++	+	++	NA	+	+	++	+	NA	NA	++	NR	+	+	NR	+	+
Forsyth (2007)	+	+	+	+	++	NA	NR	+	+	+	NA	NA	NA	-	+	++	++	+	+
Engin & Cam (2006)	+	+	NR	+	++	NA	NR	+	+	+	NA	NA	NA	NR	+	++	+	+	+
Lu et al (2007)	+	+	+	+	++	NA	NR	+	NR	+	NA	NA	NA	NR	+	++	+	+	+
De Benedictis et al (2011)	+	+	NR	+	++	NA	NR	+	++	+	NA	NA	+	NR	++	++	++	+	+
Jalil et al (2017)	+	+	+	+	++	NA	+	+	+	++	NA	NA	+	+	++	++	++	+	+
Katsuki et al (2005)	+	NR	NR	+	++	NA	NR	+	+	+	NA	NA	+	NR	+	++	++	+	+
Kouchaki et al (2016)	+	+	NR	+	++	NA	NR	+	+	+	NA	NA	NA	NR	+	++	+	+	+
Law et al (2009)	+	++	++	+	++	+	NR	+	+	+	+	NA	NA	NA	++	++	++	+	+
McDonald & Ahern (2002)	NR	+	-	+	+	NA	NR	+	+	−	NA	NA	NA	NR	+	+	NA	+	-
Massey (1991)	+	+	+	+	+	NA	NR	+	+	-	+	NA	NA	NR	NA	+	NA	+	+

Key: ++ study minimised bias for study aspect named; + unclear or incomplete minimisation of bias; - significant sources of bias persist; NR aspect of study is not reported; NA not applicable for study design under review

Table 3: Measurement tools used and psychometric properties

Study	Scale used	Content/Outcomes measured (Anger-related information **in bold**)	Internal consistency	Validity	Reliability
De Benedictis et al (2011)	Group Environment Scale (GES) (Moos, 2002)	90 items measuring aspects of team climate: team cohesiveness; leader support; tolerance for self-discovery, guidance in performing tasks, **expression of anger and aggression within the team (9 items);** order and organisation; freedom of speech; leader control; tolerance of independence; and tolerance for innovation.	+	Fa	-
Engin & Cam (2006)	Trait Anger-Anger Expression Scale (Spielberger et al., 1983) – adapted in Turkish language	**34 item measure: 10 items for trait anger and 24 items for anger expression: three subscales: anger control; anger expression; and anger suppression.**	-	Fa, Co	-
Forsyth (2007)	Items taken from Empathy Scale (ES) (Burns & Nolen-Hoeksema, 1992; Persons & Burns, 1985)	**The study intended to measure: anger, empathy, and helping behaviour, with the Empathy Scale which comprises 10 items.**	+	-[a]	-
Jalil et al (2017)	Novaco Anger Scale – Provocation Inventory (NAS-PI) (Novaco, 2003)	**A two-part anger measure. 60 item comprises four anger disposition subscales: cognition; arousal; behaviour; and regulation. 25 items focuses on situations such as: disrespectful treatment; unfairness; frustration; annoying traits of others; and irritations.**	+	Fa, Co, Con	_
Katsuki et al (2005)	Nurse Attitude Scale (NAS) (authors)	30 item measure which factor analysis revealed three factors: criticism; **hostility (6 items)**; and positive remarks.	+	Fa, Co, Con	+
Kouchaki et al (2016)	Multidimensional Anger Inventory (MAI) (Siegel, 1986)	**38 item to measure anger in relation to frequency, duration, magnitude, range of anger-arousing situations, mode of expression, and hostile outlook.**	+	Co, Con	-
Lanza (1983)	A purpose-developed questionnaire (author)	**Short and long term emotional (anger), cognitive, social and bio-physiological reactions to assault, in which the intensity is rated**	-	-	-
Law et al (2009)	Items taken The Attribution Questionnaire-24 (AQ24) Corrigan et al., 2001	18 items taken from AQ24 and wording of items were adapted which comprised 8 subscales: personal responsibility; sympathy; **anger (*n* items unstated)**; anxiety; helping/rejecting behaviours, support for coercion and segregation; perceived manipulation; and perceived severity of risk.	+	-[b]	-
Lu & Liu (2007)	Assault Response Questionnaire (Lanza, 1988) adapted in Chinese language	44 item questionnaire which has 3 subscales: emotional, bio-physiological, and social. **An anger item is included within the emotional subscale.**	-[d]	Fa	-

Author	Instrument	Description	Fa	Co	Con
McDonald & Ahern (2002)	Purpose-developed study questionnaire (authors)	Questionnaire contained nursing dilemmas, whistleblower and non-whistleblower actions, and **physical and emotional problems (including anger)** known to be associated with stress.	-[c]	Co, Con	-
Massey (1991)	Purpose-developed study task (author)	A task that involves 10 partial sentences **to be completed freehand to** explore nurses' feelings. Responses researcher-assigned as 'anger'.	-	-	-
Ryan & Poster (1989)	A modified version of Assault Response Questionnaire (Lanza, 1983)	61 item which measures short and long term responses to assault in four categories: social; emotional **(anger, *n* items unstated);** cognitive; and biophysiological.	+	-[e]	+

Key: Fa = Face validity, Co = Construct validity, Con = Concurrent validity

[a] Anger is not a factor in the Empathy Scale (Pearson & Burns, 1985); [b] Paper reports Attribution Questionnaire has been used in another paper, but it could not be identified in the cited paper to ascertain its psychometric properties; [c] Paper states internal reliability tests were carried out, but does not report Cronbach's alpha value; [d] Assault Response Questionnaire (Lanza, 1988) translated in Chinese, but no IR tests were reported; [e] Paper reports validity has been reported in another paper, but is not addressed in the cited paper

Figure 1: Literature search flowchart

| Studies identified through hand searching references lists: 9 | Titles identified from search of electronic databases 2787 | Excluded

2753 titles not relevant |

Abstracts screened 34

Excluded:

$k = 10$ Not reporting on anger

$k = 3$ Non-empirical

Full-text articles assessed for eligibility 26

Excluded:

$k = 5$ non-empirical

k = 1 not inpatient setting

k = 3 not psychiatric setting/related

k = 1 not in English

Studies included in the review: 12