Links between NHS Staff Experience and Patient Satisfaction: Analysis of surveys from 2014 and 2015

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Executive Summary

Introduction

The experience of patients within the NHS is a key concern for healthcare professionals, managers and commissioners alike. A previous report in 2009 demonstrated many links between the experiences of NHS staff, and the satisfaction of patients, in acute trusts. This report builds on the earlier report by considering more recent data, examining data from multiple years, and using more sophisticated statistical techniques to identify the most important aspects of staff experience in predicting inpatient satisfaction. It also examines separately the experiences of staff (and patients) from a black or minority ethnic (BME) background, to see to what extent the treatment of these staff are linked with patient experience.

Methods

The report uses data from acute trusts participating in the NHS staff survey and the NHS acute inpatient survey in 2014 and 2015. Trust-level data are compared using correlation and regression analysis to examine links between staff experiences and patient satisfaction. The analysis focusses on the 32 "key findings" scores published from the NHS staff survey, and develops four composite patient satisfaction scores from the inpatient survey. For each patient satisfaction variable, three analyses are conducted:

- 2014 staff experience predicting 2014 patient satisfaction
- 2015 staff experience predicting 2015 patient satisfaction
- 2014 staff experience predicting 2015 patient satisfaction

Regression analysis controls for four aspects of trust status (specialist, Foundation, London-based, and teaching trusts). Relative importance analysis is used to identify staff survey variables that are the most important predictors of patient satisfaction.

Key Findings

There are some clear and strong associations between staff experience and how satisfied patients are. Many of the relationships identified in the previous report are still important, but additional findings are based on multiple years' data and more sophisticated methods of data analysis. Although four dimensions of patient satisfaction were discovered and analysed, it was for the most part the same staff experience variables that were key predictors of them all.

The most important factors associated with patient satisfaction were:

- Work pressure felt by staff
- % staff believing trust provides equal opportunities for career progression or promotion
- Staff satisfaction with resourcing and support
- % staff feeling satisfied with the quality of work and patient care they are able to deliver
- % experiencing physical violence from colleagues in last 12 months
- % staff experiencing discrimination at work in last 12 months
- Effective team working
- % staff agreeing that patient feedback is used to make informed decisions

- % staff witnessing potentially harmful errors, near misses or incidents in last month
- Fairness and effectiveness of procedures for reporting errors, near misses or incidents

The three most important factors for BME staff specifically were:

- % staff agreeing that their role makes a difference to patients
- % staff experiencing discrimination at work in last 12 months
- % staff able to contribute toward improvements at work

Conclusion

There were many factors of staff experience that were important in predicting patient experience. High work pressure for staff, staff perceptions of unequal treatment, and discrimination against staff were all damaging for patient satisfaction, as was physical violence between staff. However, having the right conditions to deliver patient care is about more than the absence of negative experiences: it is about being able to work effectively together in effective teams, with well-designed jobs.

The effects for BME staff specifically indicate that the extent to which an organisation values its minority staff is a good barometer of how well patients are likely to feel cared for. Even though it is not possible to prove the direction of causality with these data, all of the predictors identified in this report are certainly worth the attention of trust boards and managers more generally.

Contents

1. Introduction

The experience of patients within the NHS is a key concern for healthcare professionals, managers and commissioners alike. In addition to good medical outcomes and patient safety, the provision of high quality experiences for who use the service is a major consideration.

One of the main factors believed to affect patient satisfaction is the experience of staff working in the NHS. There is a wide variety of evidence that draws links between staff experience and customer satisfaction in service sector more widely; specifically within the NHS, a number of recent studies have examined aspects of this[1,2,3]. A report published in 2009[4] undertook a systematic, exploratory approach to analysing links between the NHS staff survey from 2007, and the NHS acute inpatient survey from the same year. It found that of over 12,000 correlations examined, more than 56% were statistically significant. The largest associations with patient satisfaction were found to be good quality job design, staff intention to leave jobs, health and safety training, work pressure felt by staff, discrimination experienced by staff, bullying, harassment and abuse of staff, and confidentiality of patient information.

The landscape of the NHS has changed in several ways since the publication of the 2009 report (and even more since the data for it were collected in 2007). Therefore this current report seeks to update the analysis presented in the previous report, differing in a few key ways:

- rather than examining all survey questions separately, it focuses on the "key findings" from the NHS staff survey, and overall measures from the NHS acute inpatient survey
- it uses data from both 2014 and 2015. This creates three benefits: it allows examination of whether most associations are replicated across different years; it allows examination of whether staff experience in one year predicts patient experience in the following year; and it enables a greater range of questions to be examined, particularly in the staff survey where a few questions changed between 2014 and 2015
- it uses more sophisticated statistical techniques (in particular Relative Importance Analysis) to enable the identification of the staff survey variables that are most important in predicting patient satisfaction; and
- it examines separately the experiences of staff (and patients) from a black or minority ethnic background, to see to what extent the treatment of these staff are linked with patient experience.

Detailed methods for how this analysis is conducted are given in the following section.

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[1] Dixon-Woods, M., Baker, R., Charles, K., Dawson, J. F., Jerzembek, G., Martin, G., McCarthy, I., McKee, L., Minion, J., Ozieranski, P., Willars, J., Wilkie, P., & West, M. A. (2014). Culture and behaviour in the English National Health Service: overview of lessons from a large multi-method study. *BMJ Quality & Safety, 23,* 106-115.

[2] Powell, M., Dawson, J. F., Topakas, A., Durose, J., & Fewtrell, C. (2014). Staff satisfaction and organisational performance: evidence from a longitudinal secondary analysis of the NHS staff survey and outcome data. *Health Services and Delivery Research, 2,* 1-336.

[3] West, M. A., & Dawson, J. F. (2012). Employee engagement and NHS performance. Paper commissioned for The King's Fund review *Leadership and engagement for improvement in the NHS*. http://www.kingsfund.org.uk/document.rm?id=9545

[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215457/dh_129662.pdf

2. Methods

2.1 Overall approach

The NHS staff survey (covering all NHS trusts) and NHS acute inpatient survey (covering all NHS acute trusts with adult services) have been annual surveys conducted in the NHS in England since 2003 and 2004 respectively. Results for each NHS trust (and, in the case of the staff survey, for different groups of staff) are published annually.

In this report the analysis focusses on acute trusts that participate in both surveys. This includes specialist acute trusts, Foundation and non-Foundation trusts, and acute trusts that also provide community services. In 2014 there were 151 such trusts, and in 2015 (due to mergers and the absence of one trust from the staff survey) 148 trusts. Of these, 14 were acute specialist trusts (13 in 2015).

Some more detail on the individual surveys is provided in the following sections. However, the main analysis comprises correlation and regression methods (described in more detail in section 2.4) which examines links between staff experiences (variables from the NHS staff survey) and patient satisfaction (from the NHS acute inpatient survey). For each set of analysis, this is done three times:

- 2014 staff experience predicting 2014 patient satisfaction
- 2015 staff experience predicting 2015 patient satisfaction
- 2014 staff experience predicting 2015 patient satisfaction

The first two approaches allow replication of most specific tests: where a finding is significant and important in both years, this provides very strong evidence of a relationship. There were also some small but important differences in the staff survey questions between 2014 and 2015, so this allows examination of both sets. The third approach enables us to examine whether the experiences of staff have a longer term association with patient experience, and removes any temporally specific randomness (e.g. if a trust undergoes a significant change one year, this could affect both surveys).

2.2 NHS staff survey

The NHS staff survey has been run annually since 2003. Each NHS trust in England is obliged to participate: a minimum sample size is dictated, depending on the number of employees in the trust, and questionnaires are sent to either a random sample (covering all direct employees of the trust, not just clinical staff), or all staff if the trust prefers. In 2014, there were 170,741 respondents from acute trusts in total (an average response rate of 44%). In 2015, this figure was 200,325 (42%). More detail on the staff survey methodology can be found on the NHS Staff Survey web site[5].

The survey is designed around a series of “key findings” – scores reflecting either individual questions, or groups of questions, that between them cover almost the entire content of the survey. These are either displayed as percentages (i.e. the percentage of respondents with a particular experience), or as “scale scores”, on a scale from 1 to 5 (which are then averaged across all respondents in a trust). In 2014 there were 29 such key findings (plus an overall engagement score, which is a composite of three other key findings); in 2015 there were 32 plus the overall engagement score. This was not merely an increase of three new key findings, but several others were altered

[5] http://www.nhsstaffsurveys.com

also (for example, the 2014 key finding "Staff job satisfaction" was split up, and four separate key findings based on the questions were created instead).

A list of all of the key findings for each of the two years can be seen in Appendix 2 (e.g. Table A2.1 for the 2014 key findings, and Table A2.5 for the 2015 key findings). Details of the construction of each can be found on the NHS staff survey web site (see e.g. the document "Making Sense of Your Staff Survey Data"[6]). These key findings form the basis of the analysis in this report.

2.3 NHS acute inpatient survey

Then NHS acute inpatient survey first ran in 2002, and has run annually since 2004. In each acute trust providing adult services, a sample of 1250 adult inpatients (850 in 2014) with at least one overnight stay, is sent a copy of the questionnaire. In 2014 there were 58,125 respondents (a response rate of 45%), and in 2015 there were 83,116 respondents (also 45%). More detail on the acute inpatient survey methodology can be found on the NHS Patient Surveys web site[7].

There were a total of 78 questions in the 2014 survey, and 82 in 2015; most of these were identical across the two years. Of these, 59 (or 62 in 2015) were scored on a scale from 0 to 10; when aggregated (averaged) across all respondents for a trust, many of these were highly correlated with each other. This means that there is little point in examining each score separately. Instead, we used a method called factor analysis to combine these into four overall scores. The details of this analysis are presented in Appendix 1; however, the four patient satisfaction scores that resulted are as follows:

- Overall satisfaction (comprising 27 separate questions)
- Satisfaction with written communication (3 questions)
- Satisfaction with operations or procedures (6 questions)
- Satisfaction with hygiene (5 questions)

These four composite variables were therefore used in all subsequent analysis.

2.4 Analysis methods

As described in section 2.1, each type of analysis was repeated three times:

- 2014 staff experience predicting 2014 patient satisfaction
- 2015 staff experience predicting 2015 patient satisfaction
- 2014 staff experience predicting 2015 patient satisfaction

In addition, analysis was conducted separately for the four patient satisfaction variables:

- Overall Patient Satisfaction (comprising 27 separate questions)
- Satisfaction with Written Communication (3 questions)
- Satisfaction with Operations or Procedures (6 questions)
- Satisfaction with Hygiene (5 questions)

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[6] http://www.nhsstaffsurveys.com/Caches/Files/NHS%20Staff%20Survey%20-%20Making%20Sense%20of%20Your%20Staff%20Survey%20Data_v3.pdf

[7] http://www.nhssurveys.org/surveys/425

Therefore the main analysis included 12 different sets. Within each set, there were three different methods used for comparing staff experience variables and patient satisfaction variables.

1. **Raw correlation analysis**. This simply examines the correlation between each staff survey key finding, and each patient satisfaction variable. A positive correlation means that as one variable goes up, so does the other (on average); a negative correlation means that as one variable goes up, the other generally goes down. A correlation of 0 represents no relationship, while a correlation that is larger than 0.5 (or smaller than -0.5) represents a large relationship.

   Correlation analysis has the benefit of simplicity; however, it does not consider other factors that might be relevant. In particular, there are some systematic differences between types of trusts; patient satisfaction is generally higher in specialist trusts, in Foundation trusts, and in trusts that are not based in London. Therefore we also conducted regression analysis.

2. **Regression analysis**. This analysis allowed us to look at the same relationships as the correlation analysis, but adjust (control) for trust status. To maintain consistency with the 2009 report, we included the following control variables: trust size (full-time equivalent number of employees), specialist vs. non-specialist; Foundation trust vs. non-Foundation trust; London vs. non-London trust; and teaching status vs. non-teaching status. In each case a separate regression model was run for each staff survey variable.

   Two versions of regression results are reported. The first, the standardised coefficient, is effectively the correlation but adjusted for the control variables. For this reason these coefficients are usually substantially smaller than the correlations: much of the differences between trusts have already been taken account of by the controls. Second, the unstandardised coefficient gives the "actual" relationship between the staff survey score and the patient satisfaction score. For example, the first unstandardised regression coefficient in Table A2.1 (Appendix 2) is 0.013. This means that on average, for a 1% increase in staff feeling satisfied with the quality of work and patient care they are able to deliver, there is a 0.013 point increase in patient satisfaction; or, equivalently, for a 10% increase in staff feeling satisfied with the quality of work and patient care they are able to deliver, there is a 0.13 point increase in patient satisfaction. For the sake of comparison, the standard deviation of the patient satisfaction scores is typically in the 0.3-0.4 range, and therefore an increase of 0.13 points represents a meaningful change.

3. **Relative importance analysis**. One limitation of regression analysis, however, is that when there are many predictors of the outcome (i.e. many key findings in the staff survey), they are either analysed separately from each other (and thus ignoring that the effects of two different predictors may be substantially overlapping), or they are analysed together, in which case coefficients are distorted in the presence of high correlations between predictors (known as multicollinearity[8]).

[8] Dawson, J. F. (2015). Don't throw the baby out with the bath water: Making use of counterintuitive regression coefficients. Paper presented at the Academy of Management conference, Vancouver, August 2015.

Instead, to examine the joint effect of staff survey variables on patient satisfaction we use Relative Importance Analysis (RIA)[9]. RIA identifies which staff survey variables have the highest importance in explaining variation in patient satisfaction, and although causality cannot be assumed from the analysis, given an indication of where trusts might most usefully focus their efforts if they want to improve patient satisfaction.

For this analysis, it is important to consider that the staff survey variables are considered predictors of the patient satisfaction variable (even though causality cannot be assumed). Therefore it makes sense to remove certain staff survey variables that could be considered outcomes of patient experience[10]. Specifically these are:

- % experiencing physical violence from patients, relatives or the public
- % experiencing bullying, harassment or abuse, from patients, relatives or the public
- Staff recommendation of the trust as a place to work or receive treatment

In addition, as the overall engagement measure comprises the advocacy measure plus two other key findings, it makes sense to remove this and focus on the other key findings that are part of the measure (staff motivation, and ability to contribute toward improvements at work).

The main statistic reported for this analysis is the **relative weight** – this represents the best estimate of the proportion of variation in the outcome that can be attributed to any one particular variable.

Another objective of this report, however, is to examine whether the experiences of Black and Minority Ethnic (BME) NHS staff are uniquely related to patient satisfaction – either the satisfaction of all patients, or specifically the satisfaction of BME patients.

To examine this, we analysed the data in such a way that we used both the experiences of White staff and those of BME staff as predictors of patient satisfaction in the same models. In almost all trusts, a significant majority of staff are from a White background. If there was a statistically significant effect of the experience of BME staff in these models, this means that the way that BME staff experience their working environment is additionally important to the outcomes for patients, above and beyond the effect for staff more generally.

Compared with the previous analysis, this is less robust. The main reason for this is that, in many trusts, there were relatively few respondents: in over 40% of trusts, there were fewer than 50 such respondents, which means these data are less reliable. Therefore these results need to be treated with a higher degree of caution.

[9] Tonidandel, S., & LeBreton, J. M. (2011). Relative importance analysis: A useful supplement to regression analysis. Journal of Business and Psychology, 26(1), 1-9.

[10] Clearly the direction of causality for these variables is contentious, and there may well be causes in both directions (e.g. staff experiencing abuse from patients may be less likely to deliver high quality care; or if some patients experience poorer care, they may be more likely to abuse staff)

3. Main findings: Staff experience predicting patient satisfaction

The following four sections report on staff survey predictors of the four composite patient satisfaction variables using the analytic methods described in section 2.4. In order to focus on the key predictors of patient satisfaction, we highlight predictors that meet the following two criteria:

- The regression coefficient (adjusting for trust size; specialist vs. non-specialist; Foundation trust vs. non-Foundation trust; London vs. non-London trust; and teaching status vs. non-teaching status) is statistically significant
- The relative weight is at least 0.02; that is, at least 2% of the variance in patient satisfaction can be attributed to this staff survey key finding.

The patient satisfaction variable that most encapsulates the patient experience is the first composite score, "Overall Patient Satisfaction", which includes nearly half of all the questions in the survey (and all of the "general satisfaction" questions). This is also highly correlated with the other three composite scores (correlations are all above 0.7: see Appendix 1 for details). Therefore we give the most details for the analysis of variables predicting this score; for the others, we give a briefer summary, highlighting mainly where there were differences from the predictors of Overall Patient Satisfaction.

3.1 Predictors of Overall Patient Satisfaction

Results of these analyses are shown in Tables A2.1, A2.5 and A2.9 in Appendix 2. The key predictors of Overall Patient Satisfaction are as follows: these are shown in approximate order of importance, as defined by descending order of (at least one) relative weight:

- **Work pressure felt by staff**. This key finding was not included in the 2015 survey, but the 2014 score was the most important predictor of patient satisfaction in both the same year (2014) and the following year (2015). The negative coefficients indicate that the higher the work pressure felt by staff, the less satisfied patients were – both concurrently and in the future.

- **% staff believing trust provides equal opportunities for career progression or promotion**. This was a very important predictor of patient satisfaction in all three analyses (2014, 2015 and across the years). The more staff believe this to be the case, the more satisfied patients will be on average. Conversely, if 10% fewer staff believe that this is the case, patient satisfaction scores will be around 0.2 points lower.

- **Staff satisfaction with resourcing and support**. This was a new key finding in the 2015 survey, and effectively took the place of the "Work pressure felt by staff" key finding – so it is perhaps unsurprising that this was also a key predictor (albeit not quite as important as the previous version). The higher staff satisfaction with resourcing and support, the more patients were satisfied.

- **% staff feeling satisfied with the quality of work and patient care they are able to deliver**. Likewise, this key finding changed in calculation between 2014 and 2015: but in both versions it was an important predictor (including across the years). For an additional 10% of staff feeling satisfied with this, patient satisfaction scores in the same year increased on average by about 0.13 points, and in the following year by a similar amount.

- **% experiencing physical violence from colleagues in last 12 months**. Again, this was an important predictor in all three versions of the analysis. The effect sizes may be relatively small – only about 2-3% of staff do experience such violence – but it clearly has a very damaging effect not only for those staff but more widely too.

- **% staff experiencing discrimination at work in last 12 months**. Again, this met the importance threshold in all three versions of the analysis. However, unlike the previous predictors, this one was actually strongest in the cross-year analysis (i.e. staff reporting discrimination in 2014 was a stronger predictor of patient satisfaction in 2015). If 10% more staff in a trust reported experiencing discrimination in 2014 (in reality this ranged from 5% to 20%), then patient satisfaction would be on average 0.21 points lower the following year.

- **Effective team working**. This was also a key predictor in all three versions of the analysis. The higher the effectiveness of team working reported by staff (in terms of the clarity of objectives, interdependence of team members, and reflection by the team), the more satisfied patients were.

- **% staff agreeing that patient feedback is used to make informed decisions**. This was a key predictor in the 2015 staff survey; although it was a significant predictor in the other two versions of the analysis, it was less important. When more staff agreed that patient feedback was used to make informed decisions, the higher patient satisfaction was.

- **% staff witnessing potentially harmful errors, near misses or incidents in last month**. This was a key predictor in both 2014 and 2015, although not a significant predictor in the cross-year analysis, suggesting that any effects on patient satisfaction are more prevalent in the short term. It is a negative relationship, meaning that when more staff witness potentially harmful errors, near misses or incidents, patient satisfaction is lower. This is a smaller association however: for a 10% increase in staff witnessing these events, patient satisfaction would decrease by only around 0.02 points.

- **Fairness and effectiveness of procedures for reporting errors, near misses or incidents**. This was a key predictor of patient satisfaction in 2015, although less so in 2014 or across the years. When these procedures were perceived to be fairer and more effective, patient satisfaction was higher.

Although these are the most important predictors according to the criteria explained above, there were other significant predictors from the staff survey (in at least one year). These are listed as follows:

- % staff agreeing that their role makes a difference to patients
- % staff receiving job-relevant training, learning & development in last 12 months
- % staff having well-structured appraisals in last 12 months
- Supportive from immediate managers
- % staff suffering work related stress in last 12 months
- % staff agreeing they would feel secure raising concerns about unsafe clinical practice
- % experiencing bullying, harassment or abuse from colleagues in last 12 months
- % feeling pressure in last 3 months to attend work when feeling unwell
- % reporting good communication between senior management and staff
- % staff able to contribute toward improvements at work
- Staff job satisfaction
- Recognition and value of staff by managers and the organisation

- Staff satisfaction with level of responsibility and involvement
- Organisation and management interest in and action on health and wellbeing
- Staff motivation at work

It is also worth noting that, although they were not included in the relative importance analysis for the reasons described in section 2.4, there were strong relationships between overall patient satisfaction and overall engagement, staff recommendation of the trust as a place to work or receive treatment, and the percentage of staff experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months (although not the percentage experiencing physical violence from these sources). Therefore even though the direction of causality is particularly unclear for these scores, it gives further evidence that more engaged staff, and less mistreatment of staff, is associated with more satisfied patients.

3.2 Predictors of Satisfaction with Written Communication

Results of these analyses are shown in Tables A2.2, A2.6 and A2.10 in Appendix 2. These are largely the same as for Overall Patient Satisfaction.

The main differences are that the percentage of staff believing trust provides equal opportunities for career progression or promotion, and the percentage of staff experiencing discrimination at work in last 12 months, are not significant predictors (in any years).

There are some other minor discrepancies between years, but otherwise those factors that met the criteria for being highlighted for overall patient satisfaction, did in at least one year for Satisfaction with Written Communication.

3.3 Predictors of Satisfaction with Operations or Procedures

Results of these analyses are shown in Tables A2.3, A2.7 and A2.11 in Appendix 2. Again, most of the significant and important predictors here are those that are for overall patient satisfaction.

There are a few key differences this time, however:

- Fairness and effectiveness of procedures for reporting errors, near misses or incidents is a significant and positive predictor of satisfaction in both years
- The percentage of staff/colleagues reporting most recent experience of physical violence in last 12 months is a significant and positive predictor of satisfaction in 2015

There are some other minor discrepancies between years, but otherwise those factors that met the criteria for being highlighted for overall patient satisfaction, did in at least one year for satisfaction with communication.

3.4 Predictors of Satisfaction with Hygiene

Results of these analyses are shown in Tables A2.4, A2.8 and A2.12 in Appendix 2. Again, most of the significant and important predictors here are those that are for overall patient satisfaction.

The important differences were:

- The percentage of staff suffering work related stress in last 12 months was negatively associated with satisfaction with hygiene in 2014
- There were no links with the percentage of staff witnessing potentially harmful errors, near misses or incidents in last month, or with the percentage experiencing physical violence from colleagues in last 12 months.

4. Analysis of the experiences of Black and Minority Ethnic NHS staff

4.1 Introduction

Another question of interest is whether the experiences of Black and Minority Ethnic (BME) NHS staff are particularly linked with the satisfaction of patients – either for all patients, or for BME patients specifically.

As noted in section 2.4, this analysis is less robust due to the smaller numbers of responses from BME staff and (particularly) BME patients in many trusts. In addition, there are many separate analyses conducted, which must be treated as somewhat exploratory in nature. Therefore we only report on those staff experience variables that had significant associations with more than one outcome (either different dimensions of patient satisfaction, or different years, or both).

This is even more the case for analysis in which we considered the responses of BME inpatients only. In fact, in over 80% of trusts there were fewer than 50 BME respondents in both years, and in 2014 more than 50% of trusts had ten or fewer BME respondents.

4.2 Predictors of Satisfaction of All Patients

When the satisfaction of all patients is considered, however, there were several important findings:

The most common one was the **percentage of staff agreeing that their role makes a difference to patients**. When a higher proportion of BME staff felt that their role made a difference, satisfaction of patients was higher in all four dimensions; this was particularly strong for overall patient satisfaction.

When a higher proportion of BME staff experienced **discrimination**, patient satisfaction was lower (overall patient satisfaction, satisfaction with operations/procedures, and satisfaction with hygiene). This was the case for discrimination from both colleagues and patients/the public, and unsurprisingly was predominantly due to discrimination on the basis of ethnic background.

A higher proportion of BME staff saying they were **able to contribute toward improvements at work** was associated with higher overall patient satisfaction, satisfaction with operations/procedures, and satisfaction with hygiene.

There were also multiple significant relationships with inpatient satisfaction for the experiences of BME staff on the following staff survey variables:

- % staff agreeing they would feel secure raising concerns about unsafe clinical practice
- % reporting good communication between senior management and staff
- Effective team working
- Support from immediate managers
- Work pressure felt by staff

- Overall engagement
- % staff agreeing that patient feedback is used to make informed decisions

Clearly some of these findings mirror those for all staff; however, there are some differences also. The extent to which staff feel their role makes a difference was not as important a predictor when all staff were considered, but is the most important one for BME staff alone. This may reflect the importance that feeling valued has within an organisation: when all staff feel valued, patient care may improve. If BME staff in particular feel less valued, then this may be indicative of a culture in which not everyone is working together. This would also explain why BME staff feeling less able to contribute towards improvements might be associated with lower patient satisfaction, and why good communication, supportive immediate managers, and effective team working are particularly significant.

Similarly, when BME staff experience more discrimination (whether or not it was on the basis of their ethnicity), patient satisfaction is lower. When examining the questions on discrimination more carefully, it was evident that discrimination from either patients or from other staff was problematic here. If BME staff feel unable to raise concerns, or feel under particular work pressure, then this is also damaging for a trust's patient satisfaction score.

4.3 Predictors of Satisfaction of BME Patients

As noted in section 4.1, this analysis is more limited because there were so few BME respondents in many trusts: fewer than ten respondents in a substantial proportion of organisations. This is problematic because individual patient experiences are naturally quite varied: it is when a large number of experiences are averaged out that a more reliable estimate of a "typical" experience in a trust is formed. When so few responses are used to generate a trust's score, the statistical power to detect effects is substantially reduced.

Therefore it is not particularly surprising that only one staff variable met the criterion described in section 4.1: that variable is **Fairness and effectiveness of procedures for reporting errors, near misses or incidents**. The more fair and effective that BME staff believed these procedures to be, the higher the overall satisfaction, satisfaction with communication, and satisfaction with hygiene of BME patients in 2015. It is important not to place undue emphasis on this finding, however, as the three patient satisfaction scores were highly correlated with each other, and therefore this could still be a result due to chance alone.

5. Summary of findings

As found in the 2009 report linking staff and inpatient surveys, there are some clear and strong associations between staff experience and how satisfied patients are. The analysis in this report not only confirms that many of the relationships identified previously are still important, but draws additional findings based on multiple years' data and more sophisticated methods of data analysis. Although four dimensions of patient satisfaction were discovered and analysed, it was for the most part the same staff experience variables that were key predictors of them all.

The most important factor associated with patient satisfaction was the extent to which staff feel under pressure at work. When the pressure is higher, and when staff are less satisfied with the resources and support available, patients clearly notice and have a less satisfactory experience.

Amongst the most important factors linked to patient satisfaction, however, are issues to do with the mistreatment of staff. In organisations where employees feel that there are not equal opportunities for career progression or promotion, or when staff experience discrimination, or when staff suffer physical violence at the hands of colleagues, patients are less happy. The extent to which this is a direct effect (e.g. staff being mistreated leading to those staff mistreating others), or to do with cultures of respect and dignity, is unclear. What is clear is that in organisations where any lack of respect between humans is more prevalent, patients bear the brunt of this.

The extent to which staff have high quality jobs is also important. That is, when staff feel they are able to deliver high quality work and patient care, and when staff work in teams that have clear objectives, work closely together and meet to discuss effectiveness, patients are likely to be more satisfied. Having the right conditions to deliver patient care is about more than the absence of negative experiences: it is about being able to work effectively together. Likewise the use of information is important: when patient feedback is used to make more informed decisions, this is linked to higher patient satisfaction.

Finally, when there are fewer errors in an organisation – and, equally importantly, when systems for dealing with errors, near misses and incidents when they occur are fair and effective – patient satisfaction is higher.

There were also some important findings regarding the specific experiences of BME staff. Perhaps unsurprisingly, the issue of discrimination was particularly prominent when examining this group alone. Some of the other findings were similar to those for all staff. But there were also two other areas in which their experience was more important: when BME staff thought their role makes a difference to patients, and when they were more able to contribute toward improvements at work, overall patient satisfaction was higher. This indicates that the extent to which an organisation values its minority staff is a good barometer of how well patients are likely to feel cared for.

It is also worth paying some attention to factors that were not identified as so important. In particular one key staff survey variable that has had much attention in recent years (but was not included in the staff survey at the time of the previous report) is staff engagement. Overall engagement was indeed strongly linked with patient satisfaction; however, we broke this down into its constituent parts so that we could exclude the "advocacy" element (the extent to which staff would recommend the trust as a place to work or receive treatment – because this is likely to be affected by patient satisfaction, rather than the other way round). The other two elements – ability to contribute toward improvements at work, and staff motivation at work – were both significant predictors in some analyses when considered individually, but when analysed alongside other staff survey variables did not garner particularly high levels of importance. In some ways this is less of a

surprise: in a 2011 report[11], it was found that staff motivation was not significantly linked to patient satisfaction, even though it was linked to many other outcome variables. And although the ability of staff to contribute toward improvements at work was not as important as some other variables in the main analysis, the fact that it was one of the key predictors for BME staff specifically indicates the importance of inclusion in involvement.

6. Limitations

As with most analysis of secondary, observational data, it is important to consider that there are limitations to these findings. The most important one is that we cannot say anything definitive about the causal direction of the findings included here. Even amongst those where we observed staff experiences in 2014 being associated with patient satisfaction in 2015, it could be that there are other reasons for this: for example, other unmeasured variables (e.g. quality of senior leadership) having an effect on both. However, in many cases the relationships are entirely consistent with a causal effect that might be expected, some of which have been demonstrated in other studies elsewhere. So even though we cannot know for sure that an improvement in staff experience would lead to more satisfied patients, it seems highly likely that by focussing on some of the key issues identified as predictors in this report, trusts would be likely to improve patient satisfaction.

It is worth noting that the analysis presented here included a large number of significance tests, and therefore it is expected that some results would be due to false positive results: statistically significant findings that are due to chance alone. To mitigate against that we have concentrated our discussion on those findings that are consistent across multiple years and/or multiple forms of patient satisfaction, and those which are seen to have a particularly important effect in terms of the extent to which they can explain variation in patient satisfaction.

There is also an inconsistency between the parts of the organisations being studied. The staff survey covers all staff, in all sections of an NHS trust; the acute inpatient survey, however, deals only with inpatients, and therefore staff who deal exclusively with other services (e.g. outpatients, A&E, community services where applicable) would be less likely to have a direct influence on these patient satisfaction scores. However, there appears to be a good level of consistency of staff experience across different parts of an organisation (even though there is, of course, within-trust variability too); therefore if anything we would expect similar relationships with other groups of patients.

It is also important to note that only one type of outcome is included in this report: patient satisfaction. Of course NHS organisations deal with a wide range of outcomes, and what affects patient satisfaction is not necessarily the same as what affects health outcomes such as patient mortality, or organisational performance more generally. However, it is clearly one of many important considerations for trusts, and therefore the predictors identified in this report are certainly worth the attention of trust boards and managers more generally.

[11] West, M. A., Dawson, J. F., Admasachew, L., & Topakas, A. (2011). NHS Staff Management and Health Service Quality: Results from the NHS Staff Survey and Related Data. Report to the Department of Health. http://www.dh.gov.uk/health/2011/08/nhs-staff-management/

Appendix 1: Factor Analysis of Inpatient Survey Data

All scored survey variables from the 2014 acute inpatient survey (aggregated to NHS trust level) were entered into an exploratory factor analysis (principal axis factoring method). As this included 59 scores and only 151 trusts, parallel analysis was used to determine the number of factors to be extracted.

Five factors were suggested. On inspection of the pattern matrix, however, only four of these had at least 0.5 on any variables. Loadings for these four factors are shown in the table below (only those with loadings of magnitude at least 0.4 are shown).

Survey score	Factor loadings			
	1	2	3	4
While in the A&E department, how much information about condition or treatment was given	.480			
While in the A&E department, how much privacy was given	.576			
Satisfaction with length of wait				.420
Admission date change?				.509
Had the specialist been given all necessary information				
Had to wait a long time to get a bed on a ward	.729			
Had to share sleeping area with member of opposite sex				
Shared bathroom or shower area with member of opposite sex				
Bothered by noise from patients	.540			
Bothered by noise from staff	.573			
Cleanliness of room/ward				.515
Cleanliness of toilets/bathrooms				.523
Felt threatened by other patients or visitors	.645			
Hand wash gels available				
Quality of food				.566
Choice of food				.594
Help from staff to eat meals	.645			
Get answers from doctors that could understand	.632			
Had confidence in doctors	.577			
Doctors talk as if you weren't there	.542			
Get answers from nurses that could understand	.666			
Had confidence in nurses	.599			
Nurses talk as if you weren't there	.546			
Enough nurses to care	.777			
Staff say one thing and do opposite	.680			
Involved in decisions as much as wanted	.601			
Confidence in decisions made about condition or treatment	.662			
How much information about condition/treatment given to you	.568			
Someone on hospital staff to talk to about worries and fears	.600			
Got enough emotional support from staff	.658			
Given enough privacy for discussion of condition/treatment	.592			
Given enough privacy when examined/treated	.448			

Survey score	Factor loadings			
	1	2	3	4
Did staff do all they could to control pain	.712			
Response time to call button	.699			
Risks of procedure explained			.822	
What would be done during procedure explained			.850	
Questions about procedure answered			.735	
Told how could expect to feel post-procedure			.784	
Anaesthetic for procedure explained			.734	
Explained how procedure had gone			.657	
Involved in decisions about discharge	.473			
Given sufficient notice about discharge	.557			
Delay in discharge	.763			
Given printed information on discharge		-.634		
Purpose of medicines explained		-.449		
Side effects explained		-.458		
How to take medicine explained		-.460		
Written information about medicine given		-.525		
Medicine danger signals explained		-.465		
Family/home situation taken into account on discharge	.454			
Family member or similar given information about caring on discharge				
Staff told who to contact if worried about condition/treatment after discharge				
Need for additional equipment discussed				
Need for further services discussed				
Overall felt treated with respect & dignity	.698			
Overall felt well looked after	.739			
Overall good experience	.700			
Ever asked to give views		-.696		
Saw information about how to complain		-.471		

Those variables with loadings of magnitude above 0.5 were included in overall factor scores for each of these four. The factors created were:

Factor name	Individual scores included
Overall Patient Satisfaction	While in the A&E department, how much privacy was given
	Had to wait a long time to get a bed on a ward
	Bothered by noise from patients
	Bothered by noise from staff
	Felt threatened by other patients or visitors
	Help from staff to eat meals
	Get answers from doctors that could understand
	Had confidence in doctors
	Doctors talk as if you weren't there
	Get answers from nurses that could understand

Factor name	Individual scores included
	Had confidence in nurses
	Nurses talk as if you weren't there
	Enough nurses to care
	Staff say one thing and do opposite
	Involved in decisions as much as wanted
	Confidence in decisions made about condition or treatment
	How much information about condition/treatment given to you
	Someone on hospital staff to talk to about worries and fears
	Got enough emotional support from staff
	Given enough privacy for discussion of condition/treatment
	Did staff do all they could to control pain
	Response time to call button
	Given sufficient notice about discharge
	Delay in discharge
	Overall felt treated with respect & dignity
	Overall felt well looked after
	Overall good experience
Satisfaction with Written Communication	Given printed information on discharge
	Written information about medicine given
	Ever asked to give views
Satisfaction with Operations or Procedures	Risks of procedure explained
	What would be done during procedure explained
	Questions about procedure answered
	Told how could expect to feel post-procedure
	Anaesthetic for procedure explained
	Explained how procedure had gone
Satisfaction with Hygiene	Admission date changed?
	Cleanliness of room/ward
	Cleanliness of toilets/bathrooms
	Quality of food
	Choice of food

The internal consistency (reliability) of each of these factors was checked for both the 2014 and 2015 data. These are shown as follows:

Factor	Cronbach's alpha (2014)	Cronbach's alpha (2015)
Overall Patient Satisfaction	0.98	0.98
Satisfaction with Written Communication	0.80	0.72
Satisfaction with Operations or Procedures	0.93	0.94
Satisfaction with Hygiene	0.83	0.82

Therefore these four overall factor scores were calculated for each year. The correlations between them were as follows:

	Correlations - 2014			Correlations - 2015		
	1	2	3	1	2	3
1. Overall Patient Satisfaction						
2. Satisfaction with Written Communication	0.71			0.75		
3. Satisfaction with Operations or Procedures	0.79	0.61		0.81	0.68	
4. Satisfaction with Hygiene	0.77	0.51	0.63	0.77	0.49	0.61

Clearly the factors are highly enough correlated that we might expect similar results between them, but not so large that it is not worth analysing them separately. Therefore subsequent analysis is based on these factors.

Appendix 2 – Detailed Results of Correlation and Regression Analysis

Table A2.1: Relationships between staff survey variables and Overall Patient Satisfaction – 2014

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.46	0.16	0.013 (0.005)**	0.034
% staff agreeing that their role makes a difference to patients	0.26	0.15	0.028 (0.010)**	0.014
Work pressure felt by staff	-0.56	-0.22	-0.641 (0.170)**	0.052
Effective team working	0.42	0.16	0.851 (0.287)**	0.024
% staff working extra hours	-0.21	-0.08	-0.007 (0.005)	0.010
% staff receiving job-relevant training, learning & development in last 12 months	0.10	0.10	0.013 (0.007)*	0.005
% staff appraised in last 12 months	0.11	0.06	0.004 (0.003)	0.008
% staff having well-structured appraisals in last 12 months	0.24	0.10	0.007 (0.004)	0.008
Supportive from immediate managers	0.39	0.10	0.372 (0.210)	0.012
% staff receiving health and safety training in last 12 months	0.01	-0.04	-0.002 (0.003)	0.001
% staff suffering work related stress in last 12 months	-0.36	-0.15	-0.013 (0.005)**	0.014
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.40	-0.06	-0.005 (0.005)	0.020
% staff reporting errors, near misses or incidents witnessed in last month	0.08	0.02	0.002 (0.007)	0.001
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.44	0.16	0.688 (0.240)**	0.016
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.27	0.14	0.010 (0.004)**	0.012
% experiencing physical violence from patients, relatives or public in last 12 months	-0.46	-0.02	-0.002 (0.006)	
% experiencing physical violence from colleagues in last 12 months	-0.42	-0.04	-0.015 (0.023)	0.030
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.61	-0.18	-0.015 (0.005)**	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.33	-0.16	-0.016 (0.005)**	0.011
% feeling pressure in last 3 months to attend work when feeling unwell	-0.36	-0.14	-0.014 (0.005)**	0.011

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% reporting good communication between senior management and staff	0.33	0.12	0.007 (0.003)*	0.013
% staff able to contribute toward improvements at work	0.30	0.17	0.016 (0.005)**	0.015
Staff job satisfaction	0.46	0.18	0.748 (0.232)**	0.018
Staff recommendation of the trust as a place to work or receive treatment	0.62	0.31	0.489 (0.089)**	
Staff motivation at work	0.16	0.06	0.263 (0.222)	0.010
% staff having equality and diversity training in last 12 months	0.01	-0.01	0.000 (0.002)	0.001
% staff believing trust provides equal opportunities for career progression or promotion	0.43	0.24	0.021 (0.006)**	0.032
% staff experiencing discrimination at work in last 12 months	-0.42	-0.16	-0.020 (0.009)*	0.027
% staff agreeing that patient feedback is used to make informed decisions	0.29	0.14	0.007 (0.003)*	0.014
Overall staff engagement score	0.51	0.24	0.700 (0.163)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.638 (adjusted – 0.626). R^2 after staff survey variables included 0.745 (adjusted – 0.678)

Table A2.2: Relationships between staff survey variables and Patient Satisfaction with Written Communication – 2014

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.39	0.04	0.005 (0.007)	0.020
% staff agreeing that their role makes a difference to patients	0.20	0.03	0.007 (0.015)	0.006
Work pressure felt by staff	-0.49	-0.13	-0.508 (0.263)	0.039
Effective team working	0.37	0.13	0.898 (0.435)*	0.024
% staff working extra hours	-0.01	0.05	0.005 (0.007)	0.008
% staff receiving job-relevant training, learning & development in last 12 months	0.06	0.08	0.013 (0.010)	0.004
% staff appraised in last 12 months	0.07	0.06	0.005 (0.005)	0.004
% staff having well-structured appraisals in last 12 months	0.30	0.12	0.011 (0.005)*	0.009
Supportive from immediate managers	0.34	0.05	0.270 (0.317)	0.011
% staff receiving health and safety training in last 12 months	-0.07	-0.07	-0.005 (0.004)	0.008
% staff suffering work related stress in last 12 months	-0.23	-0.05	-0.006 (0.007)	0.007
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.41	-0.11	-0.012 (0.007)	0.050
% staff reporting errors, near misses or incidents witnessed in last month	0.12	0.02	0.004 (0.010)	0.005
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.40	0.11	0.654 (0.365)	0.014
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.28	0.10	0.010 (0.006)	0.012
% experiencing physical violence from patients, relatives or public in last 12 months	-0.57	-0.14	-0.018 (0.009)	
% experiencing physical violence from colleagues in last 12 months	-0.35	-0.02	-0.013 (0.035)	0.036
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.47	-0.08	-0.009 (0.008)	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.12	-0.03	-0.004 (0.008)	0.004
% feeling pressure in last 3 months to attend work when feeling unwell	-0.27	-0.07	-0.010 (0.008)	0.007
% reporting good communication between senior management and staff	0.36	0.10	0.008 (0.005)	0.014
% staff able to contribute toward improvements at work	0.31	0.12	0.015 (0.007)*	0.015
Staff job satisfaction	0.38	0.10	0.565 (0.356)	0.014

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff recommendation of the trust as a place to work or receive treatment	0.55	0.19	0.395 (0.143)**	
Staff motivation at work	0.17	0.04	0.221 (0.333)	0.009
% staff having equality and diversity training in last 12 months	0.03	0.02	0.001 (0.002)	0.003
% staff believing trust provides equal opportunities for career progression or promotion	0.12	0.03	0.003 (0.009)	0.004
% staff experiencing discrimination at work in last 12 months	-0.10	0.08	0.013 (0.013)	0.010
% staff agreeing that patient feedback is used to make informed decisions	0.41	0.19	0.014 (0.004)**	0.033
Overall staff engagement score	0.47	0.14	0.579 (0.255)*	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.566 (adjusted – 0.551). R^2 after staff survey variables included 0.672 (adjusted – 0.586)

Table A2.3: Relationships between staff survey variables and Patient Satisfaction with Operations or Procedures – 2014

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.38	0.17	0.011 (0.005)*	0.022
% staff agreeing that their role makes a difference to patients	0.18	0.09	0.013 (0.010)	0.005
Work pressure felt by staff	-0.49	-0.24	-0.549 (0.167)**	0.040
Effective team working	0.34	0.15	0.591 (0.283)*	0.012
% staff working extra hours	-0.17	-0.08	-0.005 (0.005)	0.005
% staff receiving job-relevant training, learning & development in last 12 months	0.16	0.14	0.014 (0.006)*	0.004
% staff appraised in last 12 months	0.09	0.05	0.002 (0.003)	0.006
% staff having well-structured appraisals in last 12 months	0.21	0.11	0.006 (0.004)	0.008
Supportive from immediate managers	0.34	0.13	0.371 (0.206)	0.011
% staff receiving health and safety training in last 12 months	-0.02	-0.05	-0.002 (0.003)	0.002
% staff suffering work related stress in last 12 months	-0.31	-0.15	-0.009 (0.004)*	0.010
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.29	-0.05	-0.003 (0.005)	0.008
% staff reporting errors, near misses or incidents witnessed in last month	0.07	0.02	0.002 (0.006)	0.001
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.47	0.28	0.929 (0.227)**	0.035
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.25	0.16	0.009 (0.004)*	0.010
% experiencing physical violence from patients, relatives or public in last 12 months	-0.34	-0.03	-0.002 (0.006)	
% experiencing physical violence from colleagues in last 12 months	-0.32	-0.03	-0.011 (0.023)	0.015
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.52	-0.21	-0.013 (0.005)**	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.33	-0.19	-0.014 (0.005)**	0.015
% feeling pressure in last 3 months to attend work when feeling unwell	-0.29	-0.12	-0.010 (0.005)	0.006
% reporting good communication between senior management and staff	0.30	0.15	0.007 (0.003)*	0.012
% staff able to contribute toward improvements at work	0.22	0.14	0.010 (0.005)*	0.006
Staff job satisfaction	0.43	0.23	0.752 (0.228)**	0.019

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff recommendation of the trust as a place to work or receive treatment	0.57	0.37	0.443 (0.087)**	
Staff motivation at work	0.18	0.11	0.351 (0.214)	0.005
% staff having equality and diversity training in last 12 months	0.00	0.00	0.000 (0.002)	0.001
% staff believing trust provides equal opportunities for career progression or promotion	0.39	0.23	0.016 (0.005)**	0.024
% staff experiencing discrimination at work in last 12 months	-0.34	-0.13	-0.012 (0.008)	0.016
% staff agreeing that patient feedback is used to make informed decisions	0.30	0.22	0.009 (0.003)**	0.021
Overall staff engagement score	0.47	0.29	0.651 (0.159)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.414 (adjusted – 0.394). R^2 after staff survey variables included 0.546 (adjusted – 0.427)

Table A2.4: Relationships between staff survey variables and Patient Satisfaction with Hygiene – 2014

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.37	0.21	0.015 (0.005)**	0.032
% staff agreeing that their role makes a difference to patients	0.14	0.10	0.017 (0.011)	0.008
Work pressure felt by staff	-0.47	-0.27	-0.695 (0.196)**	0.043
Effective team working	0.35	0.16	0.743 (0.333)*	0.029
% staff working extra hours	-0.29	-0.16	-0.013 (0.005)*	0.023
% staff receiving job-relevant training, learning & development in last 12 months	0.05	0.03	0.004 (0.008)	0.008
% staff appraised in last 12 months	0.09	0.05	0.003 (0.004)	0.005
% staff having well-structured appraisals in last 12 months	0.15	0.10	0.006 (0.004)	0.007
Supportive from immediate managers	0.26	0.06	0.190 (0.243)	0.011
% staff receiving health and safety training in last 12 months	0.10	0.02	0.001 (0.003)	0.003
% staff suffering work related stress in last 12 months	-0.36	-0.18	-0.014 (0.005)**	0.022
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.37	-0.13	-0.009 (0.005)	0.019
% staff reporting errors, near misses or incidents witnessed in last month	0.03	-0.01	-0.001 (0.008)	0.001
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.28	0.11	0.433 (0.281)	0.010
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.15	0.10	0.006 (0.004)	0.005
% experiencing physical violence from patients, relatives or public in last 12 months	-0.22	0.10	0.008 (0.007)	
% experiencing physical violence from colleagues in last 12 months	-0.30	0.00	0.000 (0.027)	0.016
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.48	-0.15	-0.011 (0.006)	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.27	-0.08	-0.007 (0.006)	0.010
% feeling pressure in last 3 months to attend work when feeling unwell	-0.19	-0.03	-0.002 (0.006)	0.007
% reporting good communication between senior management and staff	0.23	0.13	0.007 (0.004)	0.010
% staff able to contribute toward improvements at work	0.14	0.09	0.007 (0.006)	0.007
Staff job satisfaction	0.35	0.14	0.527 (0.271)	0.015

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff recommendation of the trust as a place to work or receive treatment	0.47	0.32	0.449 (0.106)**	
Staff motivation at work	0.10	0.05	0.189 (0.255)	0.008
% staff having equality and diversity training in last 12 months	0.04	-0.01	0.000 (0.002)	0.001
% staff believing trust provides equal opportunities for career progression or promotion	0.43	0.19	0.015 (0.007)*	0.040
% staff experiencing discrimination at work in last 12 months	-0.40	-0.07	-0.007 (0.010)	0.026
% staff agreeing that patient feedback is used to make informed decisions	0.21	0.16	0.008 (0.003)*	0.014
Overall staff engagement score	0.37	0.22	0.578 (0.193)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.398 (adjusted – 0.377). R^2 after staff survey variables included 0.547 (adjusted – 0.429)

Table A2.5: Relationships between staff survey variables and Overall Patient Satisfaction – 2015

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff satisfaction with the quality of work and care they are able to deliver	0.40	0.18	0.533 (0.161)**	0.035
% staff agreeing that their role makes a difference to patients	0.21	0.17	0.031 (0.009)**	0.012
Effective team working	0.42	0.21	0.972 (0.250)**	0.022
Supportive from immediate managers	0.36	0.17	0.645 (0.209)**	0.014
% staff working extra hours	-0.12	-0.07	-0.006 (0.005)	0.005
Quality of non-mandatory training, learning or development	-0.05	0.04	0.252 (0.308)	0.012
% staff appraised in last 12 months	0.17	0.04	0.003 (0.004)	0.003
Quality of appraisals	0.08	0.02	0.056 (0.137)	0.013
% staff suffering work related stress in last 12 months	-0.37	-0.13	-0.011 (0.005)*	0.017
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.33	-0.14	-0.012 (0.005)*	0.021
% staff reporting errors, near misses or incidents witnessed in last month	0.17	0.08	0.010 (0.007)	0.007
Staff confidence and security in reporting unsafe clinical practice	0.37	0.16	0.527 (0.183)**	0.012
% experiencing physical violence from patients, relatives or public in last 12 months	-0.43	-0.02	-0.002 (0.005)	
% experiencing physical violence from colleagues in last 12 months	-0.36	-0.15	-0.064 (0.022)**	0.033
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.63	-0.23	-0.017 (0.005)**	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.38	-0.16	-0.013 (0.005)**	0.011
% staff/colleagues reporting most recent experience of physical violence in last 12 months	0.09	0.06	0.003 (0.002)	0.007
% staff/colleagues reporting most recent experience of harassment, bullying or abuse in last 12 months	-0.07	0.02	0.001 (0.002)	0.009
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.44	0.17	0.579 (0.193)**	0.020
% feeling pressure in last 3 months to attend work when feeling unwell	-0.21	-0.13	-0.009 (0.003)*	0.012
% reporting good communication between senior management and staff	0.22	0.07	0.004 (0.003)	0.011
% staff able to contribute toward improvements at work	0.31	0.16	0.015 (0.005)**	0.013
Staff recommendation of the trust as a place to work or receive treatment	0.63	0.31	0.523 (0.096)**	

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff motivation at work	0.05	0.08	0.350 (0.245)	0.015
% staff believing trust provides equal opportunities for career progression or promotion	0.40	0.29	0.023 (0.005)**	0.029
% staff experiencing discrimination at work in last 12 months	-0.39	-0.23	-0.024 (0.007)**	0.021
% staff agreeing that patient feedback is used to make informed decisions	0.40	0.19	0.532 (0.149)**	0.030
Recognition and value of staff by managers and the organisation	0.37	0.18	0.583 (0.175)**	0.016
Staff satisfaction with level of responsibility and involvement	0.24	0.13	0.736 (0.287)*	0.011
Staff satisfaction with resourcing and support	0.49	0.21	0.614 (0.161)**	0.036
% staff satisfied with the opportunities for flexible working patterns	0.26	0.03	0.003 (0.005)	0.006
Organisation and management interest in and action on health and wellbeing	0.39	0.17	0.443 (0.145)**	0.006
Overall staff engagement score	0.50	0.24	0.774 (0.179)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.617 (adjusted – 0.603). R^2 after staff survey variables included 0.781 (adjusted – 0.715)

Table A2.6: Relationships between staff survey variables and Patient Satisfaction with Written Communication – 2015

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff satisfaction with the quality of work and care they are able to deliver	0.43	0.19	0.744 (0.222)**	0.031
% staff agreeing that their role makes a difference to patients	0.27	0.17	0.041 (0.013)**	0.016
Effective team working	0.35	0.13	0.787 (0.356)*	0.012
Supportive from immediate managers	0.32	0.13	0.679 (0.293)*	0.013
% staff working extra hours	0.04	-0.04	-0.004 (0.007)	0.009
Quality of non-mandatory training, learning or development	0.00	0.02	0.113 (0.426)	0.017
% staff appraised in last 12 months	0.15	0.05	0.004 (0.005)	0.004
Quality of appraisals	0.27	0.15	0.476 (0.185)*	0.008
% staff suffering work related stress in last 12 months	-0.28	-0.14	-0.015 (0.007)*	0.013
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.27	-0.16	-0.018 (0.007)**	0.031
% staff reporting errors, near misses or incidents witnessed in last month	0.12	0.05	0.009 (0.009)	0.006
Staff confidence and security in reporting unsafe clinical practice	0.32	0.09	0.411 (0.257)	0.010
% experiencing physical violence from patients, relatives or public in last 12 months	-0.50	-0.09	-0.010 (0.008)	
% experiencing physical violence from colleagues in last 12 months	-0.19	-0.02	-0.013 (0.031)	0.010
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.53	-0.19	-0.018 (0.006)**	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.22	-0.10	-0.011 (0.007)	0.016
% staff/colleagues reporting most recent experience of physical violence in last 12 months	0.14	0.09	0.005 (0.003)	0.005
% staff/colleagues reporting most recent experience of harassment, bullying or abuse in last 12 months	-0.14	-0.06	-0.003 (0.003)	0.027
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.43	0.15	0.671 (0.269)*	0.021
% feeling pressure in last 3 months to attend work when feeling unwell	-0.25	-0.13	-0.011 (0.005)*	0.013
% reporting good communication between senior management and staff	0.34	0.15	0.011 (0.004)**	0.013
% staff able to contribute toward improvements at work	0.33	0.13	0.016 (0.007)*	0.014
Staff recommendation of the trust as a place to work or receive treatment	0.58	0.23	0.511 (0.140)**	

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff motivation at work	0.11	0.09	0.544 (0.337)	0.012
% staff believing trust provides equal opportunities for career progression or promotion	0.09	0.06	0.007 (0.007)	0.003
% staff experiencing discrimination at work in last 12 months	-0.08	0.00	0.000 (0.010)	0.004
% staff agreeing that patient feedback is used to make informed decisions	0.40	0.16	0.609 (0.209)**	0.022
Recognition and value of staff by managers and the organisation	0.37	0.18	0.778 (0.242)**	0.017
Staff satisfaction with level of responsibility and involvement	0.20	0.11	0.777 (0.399)	0.010
Staff satisfaction with resourcing and support	0.46	0.20	0.777 (0.224)**	0.030
% staff satisfied with the opportunities for flexible working patterns	0.28	0.11	0.012 (0.006)	0.010
Organisation and management interest in and action on health and wellbeing	0.32	0.14	0.472 (0.203)*	0.010
Overall staff engagement score	0.48	0.19	0.802 (0.253)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.585 (adjusted – 0.570). R^2 after staff survey variables included 0.720 (adjusted – 0.635)

Table A2.7: Relationships between staff survey variables and Patient Satisfaction with Operations or Procedures – 2015

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff satisfaction with the quality of work and care they are able to deliver	0.32	0.12	0.257 (0.132)	0.020
% staff agreeing that their role makes a difference to patients	0.20	0.18	0.023 (0.008)**	0.017
Effective team working	0.35	0.14	0.445 (0.207)*	0.013
Supportive from immediate managers	0.28	0.07	0.199 (0.172)	0.009
% staff working extra hours	-0.10	-0.05	-0.003 (0.004)	0.005
Quality of non-mandatory training, learning or development	-0.02	0.06	0.255 (0.246)	0.007
% staff appraised in last 12 months	0.18	0.04	0.002 (0.003)	0.005
Quality of appraisals	0.06	-0.02	-0.034 (0.110)	0.012
% staff suffering work related stress in last 12 months	-0.33	-0.10	-0.006 (0.004)	0.021
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.35	-0.16	-0.010 (0.004)*	0.032
% staff reporting errors, near misses or incidents witnessed in last month	0.11	0.03	0.003 (0.005)	0.004
Staff confidence and security in reporting unsafe clinical practice	0.35	0.13	0.321 (0.148)*	0.016
% experiencing physical violence from patients, relatives or public in last 12 months	-0.41	-0.07	-0.004 (0.004)	
% experiencing physical violence from colleagues in last 12 months	-0.26	-0.07	-0.019 (0.018)	0.012
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.58	-0.23	-0.012 (0.004)**	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.34	-0.13	-0.007 (0.004)	0.010
% staff/colleagues reporting most recent experience of physical violence in last 12 months	0.13	0.12	0.004 (0.002)*	0.021
% staff/colleagues reporting most recent experience of harassment, bullying or abuse in last 12 months	-0.15	-0.07	-0.002 (0.002)	0.029
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.42	0.17	0.410 (0.156)**	0.025
% feeling pressure in last 3 months to attend work when feeling unwell	-0.14	-0.05	-0.002 (0.003)	0.003
% reporting good communication between senior management and staff	0.20	0.04	0.002 (0.003)	0.009
% staff able to contribute toward improvements at work	0.25	0.10	0.006 (0.004)	0.010
Staff recommendation of the trust as a place to work or receive treatment	0.54	0.23	0.278 (0.082)**	

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff motivation at work	-0.01	0.01	0.027 (0.197)	0.023
% staff believing trust provides equal opportunities for career progression or promotion	0.30	0.14	0.008 (0.004)	0.010
% staff experiencing discrimination at work in last 12 months	-0.34	-0.18	-0.014 (0.006)*	0.019
% staff agreeing that patient feedback is used to make informed decisions	0.35	0.15	0.298 (0.122)*	0.022
Recognition and value of staff by managers and the organisation	0.29	0.09	0.213 (0.144)	0.013
Staff satisfaction with level of responsibility and involvement	0.17	0.06	0.238 (0.234)	0.011
Staff satisfaction with resourcing and support	0.42	0.15	0.320 (0.133)*	0.030
% staff satisfied with the opportunities for flexible working patterns	0.20	0.00	0.000 (0.004)	0.005
Organisation and management interest in and action on health and wellbeing	0.37	0.15	0.286 (0.118)*	0.014
Overall staff engagement score	0.41	0.16	0.358 (0.149)*	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.525 (adjusted – 0.508). R^2 after staff survey variables included 0.680 (adjusted – 0.583)

Table A2.8: Relationships between staff survey variables and Patient Satisfaction with Hygiene – 2015

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff satisfaction with the quality of work and care they are able to deliver	0.33	0.19	0.518 (0.181)**	0.030
% staff agreeing that their role makes a difference to patients	0.11	0.12	0.019 (0.011)	0.006
Effective team working	0.31	0.14	0.583 (0.288)*	0.012
Supportive from immediate managers	0.31	0.16	0.528 (0.236)*	0.011
% staff working extra hours	-0.27	-0.17	-0.012 (0.005)*	0.013
Quality of non-mandatory training, learning or development	-0.07	0.05	0.243 (0.343)	0.007
% staff appraised in last 12 months	0.11	0.00	0.000 (0.004)	0.001
Quality of appraisals	-0.04	-0.02	-0.037 (0.153)	0.022
% staff suffering work related stress in last 12 months	-0.36	-0.11	-0.008 (0.005)	0.014
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.34	-0.14	-0.011 (0.005)	0.016
% staff reporting errors, near misses or incidents witnessed in last month	0.17	0.07	0.008 (0.007)	0.006
Staff confidence and security in reporting unsafe clinical practice	0.28	0.15	0.442 (0.206)*	0.008
% experiencing physical violence from patients, relatives or public in last 12 months	-0.20	0.08	0.006 (0.006)	
% experiencing physical violence from colleagues in last 12 months	-0.29	-0.10	-0.037 (0.025)	0.018
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.51	-0.21	-0.013 (0.005)*	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.35	-0.10	-0.007 (0.005)	0.008
% staff/colleagues reporting most recent experience of physical violence in last 12 months	0.11	0.11	0.004 (0.003)	0.009
% staff/colleagues reporting most recent experience of harassment, bullying or abuse in last 12 months	0.14	0.21	0.007 (0.002)**	0.014
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.30	0.13	0.401 (0.219)	0.011
% feeling pressure in last 3 months to attend work when feeling unwell	-0.15	-0.14	-0.008 (0.004)*	0.011
% reporting good communication between senior management and staff	0.13	0.08	0.004 (0.004)	0.011
% staff able to contribute toward improvements at work	0.18	0.09	0.008 (0.006)	0.006
Staff recommendation of the trust as a place to work or receive treatment	0.47	0.28	0.415 (0.113)**	

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff motivation at work	0.05	0.09	0.364 (0.273)	0.008
% staff believing trust provides equal opportunities for career progression or promotion	0.41	0.17	0.012 (0.006)*	0.026
% staff experiencing discrimination at work in last 12 months	-0.43	-0.16	-0.015 (0.008)	0.026
% staff agreeing that patient feedback is used to make informed decisions	0.27	0.16	0.392 (0.170)*	0.015
Recognition and value of staff by managers and the organisation	0.30	0.16	0.461 (0.198)*	0.015
Staff satisfaction with level of responsibility and involvement	0.20	0.10	0.506 (0.324)	0.009
Staff satisfaction with resourcing and support	0.46	0.25	0.657 (0.180)**	0.043
% staff satisfied with the opportunities for flexible working patterns	0.24	0.04	0.003 (0.005)	0.005
Organisation and management interest in and action on health and wellbeing	0.38	0.19	0.436 (0.163)**	0.018
Overall staff engagement score	0.37	0.21	0.604 (0.205)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.400 (adjusted – 0.379). R^2 after staff survey variables included 0.588 (adjusted – 0.463)

Table A2.9: Relationships between 2014 staff survey variables and 2015 Overall Patient Satisfaction

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.42	0.16	0.012 (0.004)**	0.028
% staff agreeing that their role makes a difference to patients	0.22	0.14	0.024 (0.009)**	0.007
Work pressure felt by staff	-0.53	-0.21	-0.577 (0.157)**	0.050
Effective team working	0.43	0.20	0.989 (0.260)**	0.030
% staff working extra hours	-0.16	-0.07	-0.006 (0.004)	0.006
% staff receiving job-relevant training, learning & development in last 12 months	0.10	0.12	0.014 (0.006)*	0.006
% staff appraised in last 12 months	0.06	0.03	0.002 (0.003)	0.002
% staff having well-structured appraisals in last 12 months	0.22	0.12	0.007 (0.003)*	0.006
Supportive from immediate managers	0.37	0.13	0.446 (0.195)*	0.011
% staff receiving health and safety training in last 12 months	0.01	-0.04	-0.002 (0.002)	0.001
% staff suffering work related stress in last 12 months	-0.33	-0.13	-0.010 (0.004)*	0.009
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.35	-0.05	-0.004 (0.004)	0.014
% staff reporting errors, near misses or incidents witnessed in last month	0.09	0.02	0.002 (0.006)	0.001
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.39	0.13	0.533 (0.226)*	0.013
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.22	0.12	0.008 (0.004)*	0.006
% experiencing physical violence from patients, relatives or public in last 12 months	-0.40	0.02	0.002 (0.006)	
% experiencing physical violence from colleagues in last 12 months	-0.38	-0.02	-0.007 (0.021)	0.026
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.59	-0.17	-0.013 (0.005)*	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.35	-0.20	-0.018 (0.005)**	0.017
% feeling pressure in last 3 months to attend work when feeling unwell	-0.37	-0.19	-0.018 (0.005)**	0.016
% reporting good communication between senior management and staff	0.29	0.10	0.006 (0.003)	0.009
% staff able to contribute toward improvements at work	0.30	0.20	0.017 (0.004)**	0.013
Staff job satisfaction	0.43	0.19	0.749 (0.216)**	0.015

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff recommendation of the trust as a place to work or receive treatment	0.57	0.28	0.402 (0.084)**	
Staff motivation at work	0.18	0.11	0.436 (0.201)*	0.005
% staff having equality and diversity training in last 12 months	-0.02	-0.03	-0.001 (0.002)	0.002
% staff believing trust provides equal opportunities for career progression or promotion	0.44	0.27	0.021 (0.005)**	0.037
% staff experiencing discrimination at work in last 12 months	-0.43	-0.20	-0.021 (0.008)**	0.032
% staff agreeing that patient feedback is used to make informed decisions	0.24	0.14	0.007 (0.003)*	0.008
Overall staff engagement score	0.48	0.24	0.644 (0.151)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.634 (adjusted – 0.621). R^2 after staff survey variables included 0.735 (adjusted – 0.665)

Table A2.10: Relationships between 2014 staff survey variables and 2015 Patient Satisfaction with Written Communication

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.40	0.08	0.007 (0.006)	0.022
% staff agreeing that their role makes a difference to patients	0.19	0.04	0.008 (0.012)	0.006
Work pressure felt by staff	-0.49	-0.15	-0.543 (0.220)*	0.040
Effective team working	0.36	0.14	0.880 (0.365)*	0.025
% staff working extra hours	0.00	0.01	0.001 (0.006)	0.008
% staff receiving job-relevant training, learning & development in last 12 months	0.01	0.05	0.008 (0.009)	0.010
% staff appraised in last 12 months	-0.01	0.00	0.000 (0.004)	0.002
% staff having well-structured appraisals in last 12 months	0.30	0.14	0.011 (0.005)*	0.013
Supportive from immediate managers	0.36	0.11	0.524 (0.267)	0.012
% staff receiving health and safety training in last 12 months	-0.06	-0.07	-0.004 (0.003)	0.004
% staff suffering work related stress in last 12 months	-0.27	-0.11	-0.012 (0.006)*	0.009
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.36	-0.09	-0.009 (0.006)	0.028
% staff reporting errors, near misses or incidents witnessed in last month	0.14	0.05	0.008 (0.008)	0.009
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.40	0.14	0.728 (0.308)*	0.019
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.25	0.10	0.009 (0.005)	0.010
% experiencing physical violence from patients, relatives or public in last 12 months	-0.53	-0.09	-0.010 (0.008)	
% experiencing physical violence from colleagues in last 12 months	-0.33	-0.03	-0.013 (0.029)	0.028
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.51	-0.14	-0.014 (0.007)*	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.17	-0.11	-0.013 (0.007)	0.005
% feeling pressure in last 3 months to attend work when feeling unwell	-0.31	-0.13	-0.016 (0.007)*	0.010
% reporting good communication between senior management and staff	0.38	0.14	0.010 (0.004)*	0.014
% staff able to contribute toward improvements at work	0.29	0.11	0.012 (0.006)	0.009
Staff job satisfaction	0.37	0.13	0.672 (0.301)*	0.012

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff recommendation of the trust as a place to work or receive treatment	0.57	0.23	0.434 (0.118)**	
Staff motivation at work	0.20	0.08	0.407 (0.277)	0.005
% staff having equality and diversity training in last 12 months	-0.01	-0.02	-0.001 (0.002)	0.002
% staff believing trust provides equal opportunities for career progression or promotion	0.14	0.07	0.008 (0.007)	0.003
% staff experiencing discrimination at work in last 12 months	-0.15	-0.03	-0.004 (0.011)	0.008
% staff agreeing that patient feedback is used to make informed decisions	0.36	0.18	0.012 (0.004)**	0.017
Overall staff engagement score	0.48	0.18	0.647 (0.212)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.597 (adjusted – 0.583). R^2 after staff survey variables included 0.665 (adjusted – 0.576)

Table A2.11: Relationships between 2014 staff survey variables and 2015 Patient Satisfaction with Operations or Procedures

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.33	0.09	0.005 (0.003)	0.016
% staff agreeing that their role makes a difference to patients	0.18	0.10	0.013 (0.007)	0.004
Work pressure felt by staff	-0.46	-0.15	-0.289 (0.132)*	0.035
Effective team working	0.39	0.18	0.614 (0.216)**	0.030
% staff working extra hours	-0.16	-0.05	-0.003 (0.004)	0.005
% staff receiving job-relevant training, learning & development in last 12 months	0.15	0.14	0.012 (0.005)*	0.004
% staff appraised in last 12 months	0.10	0.05	0.002 (0.002)	0.004
% staff having well-structured appraisals in last 12 months	0.21	0.10	0.004 (0.003)	0.005
Supportive from immediate managers	0.33	0.10	0.241 (0.161)	0.008
% staff receiving health and safety training in last 12 months	-0.02	-0.07	-0.002 (0.002)	0.004
% staff suffering work related stress in last 12 months	-0.28	-0.08	-0.004 (0.003)	0.006
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.32	-0.03	-0.002 (0.004)	0.011
% staff reporting errors, near misses or incidents witnessed in last month	0.11	0.04	0.004 (0.005)	0.003
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.40	0.15	0.427 (0.184)*	0.013
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.25	0.15	0.007 (0.003)*	0.011
% experiencing physical violence from patients, relatives or public in last 12 months	-0.37	0.02	0.001 (0.005)	
% experiencing physical violence from colleagues in last 12 months	-0.47	-0.16	-0.041 (0.017)*	0.062
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.57	-0.20	-0.011 (0.004)**	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.33	-0.16	-0.010 (0.004)*	0.014
% feeling pressure in last 3 months to attend work when feeling unwell	-0.28	-0.09	-0.006 (0.004)	0.006
% reporting good communication between senior management and staff	0.27	0.09	0.004 (0.003)	0.007
% staff able to contribute toward improvements at work	0.23	0.13	0.008 (0.004)*	0.006
Staff job satisfaction	0.40	0.15	0.433 (0.180)*	0.011

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff recommendation of the trust as a place to work or receive treatment	0.51	0.22	0.228 (0.072)**	
Staff motivation at work	0.18	0.11	0.303 (0.165)	0.006
% staff having equality and diversity training in last 12 months	-0.02	-0.02	0.000 (0.001)	0.001
% staff believing trust provides equal opportunities for career progression or promotion	0.40	0.21	0.012 (0.004)**	0.022
% staff experiencing discrimination at work in last 12 months	-0.41	-0.21	-0.016 (0.007)*	0.032
% staff agreeing that patient feedback is used to make informed decisions	0.24	0.13	0.005 (0.002)*	0.009
Overall staff engagement score	0.43	0.19	0.376 (0.127)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.524 (adjusted – 0.507). R^2 after staff survey variables included 0.621 (adjusted – 0.520)

Table A2.12: Relationships between 2014 staff survey variables and 2015 Patient Satisfaction with Hygiene

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
% staff feeling satisfied with the quality of work and patient care they are able to deliver	0.29	0.16	0.011 (0.005)*	0.023
% staff agreeing that their role makes a difference to patients	0.09	0.08	0.013 (0.010)	0.005
Work pressure felt by staff	-0.43	-0.24	-0.582 (0.174)**	0.054
Effective team working	0.35	0.17	0.728 (0.293)*	0.034
% staff working extra hours	-0.24	-0.12	-0.008 (0.005)	0.012
% staff receiving job-relevant training, learning & development in last 12 months	0.08	0.07	0.008 (0.007)	0.006
% staff appraised in last 12 months	0.11	0.07	0.004 (0.003)	0.010
% staff having well-structured appraisals in last 12 months	0.11	0.09	0.005 (0.004)	0.007
Supportive from immediate managers	0.23	0.05	0.144 (0.218)	0.011
% staff receiving health and safety training in last 12 months	0.14	0.04	0.002 (0.003)	0.010
% staff suffering work related stress in last 12 months	-0.31	-0.13	-0.009 (0.005)	0.016
% staff witnessing potentially harmful errors, near misses or incidents in last month	-0.29	-0.05	-0.004 (0.005)	0.009
% staff reporting errors, near misses or incidents witnessed in last month	-0.03	-0.06	-0.007 (0.007)	0.005
Fairness and effectiveness of procedures for reporting errors, near misses or incidents	0.22	0.06	0.228 (0.252)	0.009
% staff agreeing they would feel secure raising concerns about unsafe clinical practice	0.11	0.10	0.006 (0.004)	0.006
% experiencing physical violence from patients, relatives or public in last 12 months	-0.15	0.16	0.012 (0.006)	
% experiencing physical violence from colleagues in last 12 months	-0.31	-0.02	-0.006 (0.023)	0.017
% experiencing bullying, harassment or abuse from patients, relatives or public in last 12 months	-0.48	-0.14	-0.009 (0.005)	
% experiencing bullying, harassment or abuse from colleagues in last 12 months	-0.31	-0.12	-0.009 (0.006)	0.015
% feeling pressure in last 3 months to attend work when feeling unwell	-0.23	-0.08	-0.007 (0.006)	0.007
% reporting good communication between senior management and staff	0.16	0.08	0.004 (0.004)	0.009
% staff able to contribute toward improvements at work	0.14	0.12	0.009 (0.005)	0.007
Staff job satisfaction	0.31	0.12	0.428 (0.244)	0.013

Staff survey variable	Correlation[1]	Standardised coefficient[2]	Unstandardised coefficient (standard error)[3]	Relative weight[4]
Staff recommendation of the trust as a place to work or receive treatment	0.41	0.26	0.325 (0.096)**	
Staff motivation at work	0.09	0.06	0.198 (0.224)	0.005
% staff having equality and diversity training in last 12 months	0.00	-0.05	-0.001 (0.002)	0.006
% staff believing trust provides equal opportunities for career progression or promotion	0.47	0.23	0.016 (0.006)**	0.044
% staff experiencing discrimination at work in last 12 months	-0.48	-0.17	-0.017 (0.009)	0.047
% staff agreeing that patient feedback is used to make informed decisions	0.09	0.07	0.003 (0.003)	0.007
Overall staff engagement score	0.32	0.19	0.454 (0.172)**	

[1] The raw correlation between the staff survey score and patient satisfaction score

[2] Effectively this is the correlation adjusted for specialist trust status, foundation trust status, teaching trust status, trust size and whether or not the trust is in London

[3] This gives the "actual" size of the relationship: a one unit (e.g. 1%) increase in the staff survey variable is associated with this expected change in the patient satisfaction variable. These are relationships adjusted for the above control variables, but not adjusted for other staff survey variables. Asterisks show the level of statistical significance for this relationship: * $p < .05$; ** $p < .01$

[4] This gives the relative importance of each variable when taking others into account. A weight of 0.020 indicates that 2% of the variance in patient satisfaction can be accounted for by this variable.

R^2 due to control variables: 0.426 (adjusted – 0.406). R^2 after staff survey variables included 0.579 (adjusted – 0.467)