

## Perceived organizational support in health care: the importance of teamwork and training for employee well-being and patient satisfaction

Article (Accepted Version)

Ogbonnaya, Chidiebere, Tillman, C Justice and Gonzalez, Katerina (2018) Perceived organizational support in health care: the importance of teamwork and training for employee well-being and patient satisfaction. *Group & Organization Management*, 43 (3). pp. 475-503. ISSN 1059-6011

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Perceived organizational support in healthcare: The importance of teamwork and training for employee well-being and patient satisfaction

### Abstract

This study uses organizational support theory to examine how healthcare employees' perceptions of teamwork influence patient satisfaction through a serial mediation involving employee well-being and intention to remain. The study also examines the extent to which the training that employees receive might enhance these relationships. Hypothesized assumptions are tested by multilevel analysis using data from 66,930 employees nested within 162 organizations from the British National Health Service (NHS). Our findings indicate that teamwork has a positive indirect association with patient satisfaction through employee well-being (i.e., job satisfaction and work engagement) and intention to remain, in sequence. The strength of this indirect relationship is also enhanced by training provided to employees by the organization.

**Keywords:** Teamwork, training, employee well-being, intention to remain, patient satisfaction.

## Teamwork, employee well-being, and healthcare performance

Human resource activities in multidisciplinary settings such as healthcare involve team-based processes whereby doctors, nurses, and other health professionals interact collaboratively (Sedki, Mendez, Bruer, & Levine, 2015; So, West & Dawson, 2011). Teamwork in healthcare is a dynamic workplace activity in which two or more healthcare workers collaborate on decisions and work interdependently towards achieving a common purpose (Manser, 2009). Well-functioning team processes shape positive employee attitudes by allowing employees to coordinate each other's work, jointly decide on how work objectives are to be attained, support one another, and achieve higher levels of performance. Favorable employees' perceptions of teamwork should facilitate safe and efficient patient-centered services and promote patient satisfaction, which is increasingly recognized as a criterion for assessing healthcare performance (Doyle, Lennox & Bell, 2013). Although some studies have reported links between teamwork and quality healthcare services (e.g., Sedki et al., 2015), research in this area has seldom examined the underlying individual-level mechanisms explaining and/or enhancing this process. As a result, there are considerable gaps in our understanding of potential mediators and moderators that explain how and why perceptions of teamwork influence healthcare outcomes.

The primary aim of this study is to examine the role of employee well-being (i.e., job satisfaction and work engagement) and intention to remain in explaining the indirect relationships between employees' perceptions of teamwork and patient satisfaction. Teamwork improves employee well-being and positive attitudes through a process of perceived organizational support, involving social interaction, collective idea generation, collaborative decision-making, and innovative problem-solving (Kozlowski & Bell, 2003). According to organizational support theory (OST: Eisenberger, Huntington, Hutchison, & Sowa, 1986), the level of support generated through an organization's positive actions can stimulate favorable

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employees' evaluations about the organization. This, in turn, has benefits for employee well-being and organizational performance. The present study provides a unique opportunity to apply OST to the knowledge of teamwork dynamics in healthcare. We extend current knowledge by examining how employees' experience of working in teams might indirectly influence patient satisfaction through a serial mediation involving employee well-being and intention to remain employed by the organization (hereinafter 'intention to remain').

The secondary aim of the present study is to ascertain whether training received by healthcare employees amplifies the indirect links, via employee well-being and intention to remain, between employees' perceptions of teamwork and patient satisfaction. From an OST perspective, staff training represents an important resource for expanding employees' knowledge base and reinforcing their workplace skills and abilities (Barling, Kelloway, & Iverson, 2003). Employees may perceive training provisions as favorable treatment from the organization, and reciprocate through positive actions directed at organizational effectiveness. Similarly, training enables healthcare workers to cooperate better with teammates, take steps to avoid risks to patients' safety, and engage proactively in patient-oriented problem-solving. Thus, we expect any positive indirect relationship between employees' perceived teamwork and patient satisfaction, via employee well-being and intention to remain, to improve when employees receive training. Insights gained from our study will enhance the understanding of skill-enhancement support and the links with employee well-being and patient satisfaction.

Our study centers on the British National Health Service (NHS), a public healthcare sector organization funded from taxation and state benefits contributions. The British NHS operates in a unique environment faced with an aging and growing population, increasing patient expectations, and government's cuts on health and social care budgets. These factors are among

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key challenges undermining the quality of health and social services delivered by healthcare institutions (Desombre, Kelliher, Macfarlane & Ozbilgin, 2006). Recently, there have been calls for the British NHS to re-examine its strategy on talent management and well-being to provide better patient-centered health services (Boorman, 2009). The progress made in this area includes assessing the performance of NHS organizations through annual surveys on staff experiences and patients' evaluation of healthcare quality. The present study combines key elements from two of these surveys, the 2011 British NHS Staff Survey and the 2011 Adult Inpatients Survey, to shed light on how teamwork processes in healthcare are directly associated with employees' work experiences and indirectly associated with patient satisfaction. The study also highlights areas of good practice in relation to the type of training provided by healthcare institutions.

In the sections that follow, we delineate a theoretical model (see Figure 1) based on OST. We examine whether perceived job satisfaction, work engagement, and intention to remain have a role in explaining the indirect links between employees' perceptions of teamwork and an important healthcare performance indicator, patient satisfaction. We also theorize that healthcare employees' work experiences are enhanced through training offered to them by the organization.

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Insert Figure 1 about here  
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**Organizational Support Theory (OST)**

According to OST, employees form general beliefs about the organization based on the extent to which they perceive their employer values and cares about their well-being (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002). As employees have socio-emotional needs (e.g., for affiliation; McClelland, Atkinson, Clark, & Lowell, 1953), their attitudes towards

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the organization improve when the organization takes positive and supportive actions towards developing their experiences of work (Marique, Stinglhamber, Desmette, Caesens, & De Zanet, 2013). The perceived quality of organizational support is thus associated with a number of important outcomes such as job satisfaction, work engagement, and enhanced intention to remain; however, the nature of these outcomes may vary depending on the source of support. For example, employees may develop perceptions about the quality of their social interaction or collaboration with co-workers, just as they may form perceptions about job resources offered by the organization to reinforce their skills. Thus, different foci of perceived organizational support can be identified, including employees' evaluations of social support (e.g., social interaction and collaboration in teams) and support for skill-enhancement (e.g., provision of training). Perceived organizational support, whether in terms of social support or skill-enhancement support, can stimulate employees' sense of reciprocity and perceived obligation towards the organization (Rhoades & Eisenberger, 2002).

Reciprocal loyalty translates into important work outcomes, such as increased employee performance and an enhanced sense of obligation towards organizational objectives. Rhoades and Eisenberger's (2002) meta-analysis of seventy studies provides evidence to support the notion that perceived organizational support is associated with positive outcomes for both employees (e.g., job satisfaction, job performance) and the organization (e.g., performance, reduced withdrawal behavior). A more recent meta-analysis of 558 studies reinforced Rhoades and Eisenberger's (2002) findings with evidence to show perceived organizational support is associated with a broader range of outcomes, including job involvement and commitment, subjective well-being, and reduced withdrawal behaviors (Kurtessis et al., 2015). Kurtessis and colleagues (2015) also analyzed antecedents of perceived organizational support and found

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evidence that favorable treatment by organizational members (e.g., co-workers, supervisors, and team-members) and human resource practices such as training and developmental opportunities can stimulate positive perceptions of organizational support. Indeed, employees may experience organizational support either through their level of interaction with organizational members (e.g., teamwork) or incentives (e.g., training) offered to them by the organization.

### **Employees' Teamwork Perceptions and Well-Being**

Teamwork is a core activity in the workplace, involving two or more individuals who coordinate each other's effort towards accomplishing desirable outcomes (e.g., Sommer, Howell, & Hadley, 2015). Work teams operate in a multilevel system comprising both workplace-level elements (e.g., the performance objectives set for the team) and individual-level factors (i.e., team members' direct experiences of the work process; Kozlowski & Klein, 2000). Individual-level factors include social interaction, shared purpose, participative decision-making, and coordinated role exchanges, all of which influence subsequent individual attitudes and behaviors (Ramamoorthy & Flood, 2004). In the context of OST, these individual-level factors reflect the idea of co-worker support. Co-worker support is defined as "the extent to which employees believe their co-workers are willing to provide them with work-related assistance to aid in the execution of their service-based duties" (Susskind, Kacmar, & Borchgrevink, 2003, p.183). Co-worker support can create either a pleasant or unpleasant (e.g., through peer pressure and personality clashes) situation in the work environment (Tews, Michel, & Ellingson, 2013); yet, it is essential for employees' assessment of organizational support (Kurtessis et al., 2015). As with other forms of perceived support within the workplace (e.g., supervisory support), co-worker support is an important determinant of workplace outcomes (Susskind et al., 2003). The present

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study considers co-worker support in terms of individuals' perceptions of shared objectives, collaborative effort, and social interaction within the team context.

Favorable employees' perceptions of teamwork improve employee well-being (c.f. van Mierlo, Rutte, Kompier, & Doorewaard, 2005). Employee well-being represents a summary evaluation of employees' mood, emotion, and feelings about their working lives (Diener, Lucas, & Scollon, 2006). Two important indicators of employee well-being are examined in the present study, namely job satisfaction and work engagement (Bakker & Oerlemans, 2011). Job satisfaction captures one's subjective experience of contentment with different aspects of work (Spector, 1997), whereas work engagement describes the dedication and investment of one's complete self into a given role (Rich, Lepine, & Crawford, 2010). The level of social support and collaboration experienced in teamwork activities may impact positively on employees' disposition at work, and consequently, their levels of job satisfaction and willingness to invest themselves in their roles (c.f. Major, Kozlowski, Chao, & Gardner, 1995). The reasoning is that effective teamwork provides scope for individuals to support each other and complete tasks that they may not be able to accomplish individually. Likewise, in healthcare, the experience of mutual support and collaboration in work teams is likely to promote job satisfaction and work engagement. Such positive well-being effects are generated through opportunities for mutual support and optimal functioning within teams.

*Hypothesis 1a.* Employees' perceptions of teamwork are positively related to job satisfaction.

*Hypothesis 1b.* Employees' perceptions of teamwork are positively related to work engagement.



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### **Employee Well-Being and Intention to Remain**

There are indications that poor well-being can undermine workers' level of attachment towards the organization (Geurts, Schaufeli & De Jonge, 1998; Tett & Meyer, 1993). Intention to remain, defined in the present study as employees' desire to stay employed by the organization, is considered a form of organizational commitment (Mottaz, 1989) with important implications for organizational effectiveness. The relationship between employee well-being and intention to remain may be explained theoretically from a social psychological perspective (Geurts et al., 1998). According to this perspective, poor employee well-being might trigger two types of withdrawal behaviors: (i) a psychological withdrawal, characterized by excessive detachment from people that one works with; and (ii) a behavioral withdrawal, associated with one's intention to quit the organization. The latter form of withdrawal relates to the idea of reciprocity in OST and social exchange theory more generally – that is, an employee who perceives the organization as less supportive may reciprocate through unfavorable behaviors directed towards the organization. This argument is supported by previous studies linking employee retention with increased job satisfaction (e.g., Tett & Meyer, 1993) and work engagement (e.g., Schaufeli and Bakker, 2004). In line with these studies, we argue that healthcare employees' positive affective evaluation of the job (i.e., their well-being) may enhance their intention to remain.

*Hypothesis 2a.* Employee job satisfaction is positively related to their intention to remain.

*Hypothesis 2b.* Employee work engagement is positively related to their intention to remain.

### **Intention to Remain and Healthcare Performance**

Employees' level of attachment towards the organization has also been associated with organizational performance. Angle and Perry's (1981) early multilevel study, for example,

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revealed significant relationships between employees' sense of commitment toward the organization, measured at the individual level, and organizational adaptability, turnover, and absenteeism, measured at the organizational level. In a more recent study, conducted in the context of healthcare, Ogbonnaya and Valizade (2016) reported positive cross-level correlations between employee outcomes and healthcare performance, measured by patient satisfaction. These studies and the wider literature on human capital and organizational performance show evidence that human resources, when motivated through social and organizational support processes, are more likely to perform well and uphold the values of the organization (e.g., Becker & Gerhart, 1996). Indeed, positive employee attitudes towards the job and the organization as a whole represent important determinants of organizational performance and effectiveness (Koys, 2001). One way to measure organizational performance in management studies is through customers' satisfaction and assessments of the quality of services received (Koys, 2001). In healthcare, patients are the key customers and their level of satisfaction is consistently used to evaluate healthcare performance (Doyle et al., 2013). With the foregoing in mind, we expect a positive relationship between employee intention to remain and patients' satisfaction.

*Hypothesis 3:* Employee intention to remain is positively related to patient satisfaction.

### **The Meditating Roles of Employee Well-Being and Intention to Remain**

Individuals form behavioral perceptions about the workplace based on their general work experiences. Employees who perceive high levels of workplace support (e.g., social support from co-workers) might acquire more cognitive or physical resources to deal with stressful situations at work (Bakker, Demerouti, & Schaufeli, 2005). Workplace support in this context may be derived from friendly advice and consideration by team members, involvement in collaborative

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and participative decision-making activities, and the experience of respect or fair treatment from co-workers (Ducharme & Martin, 2000). These organizational support systems provide resources that meet employees' socio-emotional needs and foster their positive feelings toward the organization. When employees have positive interactions with teammates, they identify better with the work environment, and in many cases, this could translate into a greater desire to remain employed by the organization. Due to greater levels of attachment toward the organization, employees in turn become more productive and willing to provide quality services to customers.

From a trickle-down perspective, we therefore suggest that healthcare workers who experience favorable and positive workplace support systems are likely to report improved well-being. Employee well-being, in turn, promotes both their intention to remain and willingness to provide services that improve patient satisfaction. Thus, we anticipate a type of serial mediation whereby the relationship between employees' teamwork perceptions and healthcare performance is explained by two processes: (i) employees' affective-based evaluation of their work experience (i.e., their well-being), and (ii) their sense of attachment toward the organization (i.e. intention to remain).

*Hypothesis 4a.* Employees' teamwork perceptions have a positive indirect relationship with patient satisfaction via job satisfaction linked serially with employee intention to remain.

*Hypothesis 4b.* Employees' teamwork perceptions have a positive indirect relationship with patient satisfaction via work engagement linked serially with employee intention to remain.

### **The Moderating Role of Training**

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The provision of training to develop employees' skills is considered a form of organizational support (Barling et al., 2003). Training promotes employees' workplace competencies. It improves their confidence to perform well at their jobs and their ability to contribute positively toward organizational effectiveness. Organizations that support employees through investments in training programs are also able to cultivate loyal and committed employees (Kurtessis et al., 2015). In the case of healthcare organizations, the types of training for promoting employee effectiveness are those associated with enhanced team functioning (e.g., diversity and inclusion training) and patient care effectiveness (e.g., patient safety and confidentiality training). The training activities considered in the present study are consistent with these key areas, and are thus applicable to the healthcare context. These training activities include both formal and informal learning opportunities provided by the organization to improve healthcare workers' knowledge on how to address diversity and aggressive behaviors in the workplace, disease and infection control, health and safety, and patient confidentiality.

OST lends itself to our understanding of how perceptions of effective teamwork and staff training may interact and improve healthcare performance through employee well-being and intention to remain. As staff training represents a form of organizational investment towards the personal growth and development of employees, it may be interpreted by employees as favorable treatment from the organization (Barling et al., 2003). The organization's benign intent for investing in staff training promotes perceptions of organizational support among employees, resulting in enhanced team working (Ellis & Pearsall, 2011), and leading to improved employee attitudes and well-being (Kurtessis et al., 2015). This in turn stimulates a social exchange process whereby employees experience a greater sense of attachment toward the organization and exert behaviors consistent with organizational goals and objectives. Since staff training is associated

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with perceived organizational support, its interaction with effective teamwork in healthcare may lead to improved healthcare outcomes. Indeed, this assumption has been supported in previous non-healthcare research (e.g., Ellis & Pearsall, 2011).

Organizational investments in training are concomitant with improvements in employees' human capital (Barling et al., 2003). In other words, an employee who receives adequate training is able to develop the needed skills and capacity to meet or exceed his/her work expectations, as well as the expectations of colleagues (or teammates) and patients. Such an employee is empowered with relevant resources to balance his/her personal role with team-based responsibilities, leading to enhanced well-being and performance. We thus anticipate that the provision of training would enhance any positive indirect relationships between employees' perceptions of teamwork and patient satisfaction via employee well-being and intention to remain.

*Hypothesis 5a.* The positive indirect relationship between employees' teamwork perceptions and patient satisfaction, via job satisfaction in series with intention to remain, is enhanced by training provided by the organization.

*Hypothesis 5b.* The positive indirect relationship between employees' teamwork perceptions and patient satisfaction, via work engagement in series with intention to remain, is enhanced by training provided by the organization.

## **Methodology**

### **Sample and Procedure**

The data used in the current study come from two independent sources – the 2011 versions of the British NHS Staff Survey and the Adult Inpatients Survey. Data were matched to provide an appropriate nested data structure for multilevel analysis. The NHS Staff Survey was

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used to derive individual-level measures of employees' teamwork perceptions, employee well-being (i.e., job satisfaction and work engagement), intention to remain, and training, whereas an organizational-level measure of patient satisfaction was derived from the Adult Inpatients Survey. Data from both surveys are managed by the Care Quality Commission in partnership with Picker Institute Europe and other regulators of health and social care services in Britain.

The 2011 NHS Staff Survey assesses NHS staff reports of working conditions and organizational policies on job design, staff learning and development. Data were collected at the level of individual employees' local NHS Trust. NHS Trusts are healthcare organizations authorized to provide specific health services such as ambulance services, emergency care services, or mental health services for the communities or locations that they serve. Data were gathered through a self-completion postal questionnaire distributed to employees' permanent work addresses, or to the home address of an employee who does not have a permanent work address. A total of 134,967 questionnaires from 366 NHS Trusts in England were completed and returned, representing fieldwork response rate of 54 percent. To ensure all employees considered in our analysis are those engaged in team-based working, we excluded all respondents who answered 'No' to the question "Do you work in a team?" The final sample size for the study is 66,930 employees nested within 162 NHS Trusts. The median number of employees in sampled NHS Trusts is 418 (range is 48 to 599).

The second data source, the 2011 NHS Adult Inpatients Survey, is part of the National Patient Survey Programme for monitoring and understanding patients' perceptions about the quality of care and treatment delivered by healthcare organizations across Britain. Topics covered in the Adult Inpatients Survey range from patients' experience of physical and emotional comfort during admission to hospital, to the nature and quality of patients' interaction

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with healthcare professionals. Data were collected by postal questionnaires distributed to adult patients who had at least one overnight stay in hospital, but were not maternity or psychiatry patients. As with the 2011 NHS Staff Survey, data were collected at the level of the NHS Trust. A total of 70,863 respondents completed the survey for 162 NHS Trusts, with a response rate of 53 percent. The median number of patient-raters for each sampled NHS Trust is 850, and the range is 502 to 854.

Measurement items for patient satisfaction were obtained from the 2011 NHS Adult Inpatients Survey. These items were originally measured at the individual patient level, but were aggregated as mean scores that proxy patient satisfaction at the organizational (i.e., NHS Trust) level. Intraclass Correlation Coefficients 1 and 2 (ICC1 and ICC2) were examined prior to data aggregation. ICC1 values for the three items ranged from 0.02 to 0.04, suggesting about two to four per cent of the variability in patients' ratings can be attributed to the NHS trust they were treated by (Bliese, 2000, p. 356). ICC2 values ranged from 0.88 to 0.94, suggesting patient-raters had up to 94 percent consistency in terms of their experiences of care and treatment delivered by the NHS Trust. These ICC values are appropriate in relation to the recommended thresholds (Bliese, 2000). Once aggregated, the data for patient satisfaction were merged with data from the 2011 NHS Staff Survey.

## **Measures**

Measurement items for *teamwork* (five items), *job satisfaction* (five items), *work engagement* (three items), *intention to remain* (three items) and *training* (five items) were selected following the precedents in previous analysis of the British NHS Staff Survey (c.f. Powell, Dawson, Topakas, Durose & Fewtrell, 2014; Ogbonnaya & Valizade, 2016; Ogbonnaya, Daniels & Nielsen, 2017; West, Guthrie, Dawson, Borrill, & Carter, 2006). Three measurement

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items for *patient satisfaction* were selected along the lines indicated by the Care Quality Commission's guidance for monitoring health and social care services in England.

Confirmatory factor analysis (CFA) was performed to ensure measurement items were reliable indicators of their corresponding constructs. Model fit for the CFA was adequate (Byrne, 2012): Chi-square ( $X^2$ ) = 5786.531; degrees of freedom ( $df$ ) = 230; p-value < 0.001; Root Mean Square Error of Approximation (RMSEA) = 0.02; Comparative fit index (CFI) = 0.95; Tucker-Lewis Index (TLI) = 0.94; Standardized Root Mean Square Residual (SRMR) = 0.02. All free factor loadings were greater than or equal to 0.50 and significant in the hypothesized direction ( $p$  < 0.001). We then examined a one-factor model to verify whether all measurement items are reducible to a one-dimensional overall factor. This model failed to fit the data adequately (RMSEA = 0.06; CFI = 0.45; TLI = 0.39; SRMR = 0.12). A two-factor model, for which teamwork, training and patient satisfaction were specified on one latent construct, and the well-being variables and intention to remain on the second latent construct, also failed to fit the data adequately (RMSEA = 0.06; CFI = 0.47; TLI = 0.42; SRMR = 0.12); thus, re-affirming the validity of our constructs. Cronbach's alpha reliability, Composite Reliability (CR) and Average Variance Explained (AVE) were examined to ensure reliability and validity of measurement items. Composite scores of the measurement items were then created and used in subsequent analyses. Full details of all study variables and corresponding measurement items, CFA factor loadings, Cronbach's alpha estimates and CR values are provided in Table 1.



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We controlled for a number of variables, namely gender of employees (female as the reference category), age of employees (six age bands with ‘66 years and above’ as the reference), hours worked by employees (reference category is less than 30 hours), the degree of employee contact with patients (with ‘no contact’ as reference), occupational group (ten categories with ‘registered nurses and midwives’ as reference), and patients’ length of stay in hospital. These variables were selected based on previous research on employee well-being and performance in the healthcare context (e.g., Powell et al., 2014; Ogbonnaya & Valizade, 2016; West et al., 2006). All control variables are aggregate scores that proxy organizational-level characteristics for each NHS Trust.

### **Data Analysis**

Hypotheses 1a to 4b were examined simultaneously by a one-stage serial mediation model (i.e., a model involving at least two mediators in sequence) with the robust maximum likelihood estimator in Mplus (version 7.1). The model was estimated on the basis of multilevel analysis to account for non-independence of our data – teamwork, job satisfaction, work engagement, and intention to remain measured at the individual level (Level-1) and patient satisfaction measured at the organizational level (Level-2). The multilevel procedure follows the random intercept approach whereby the intercepts of the regression paths vary randomly across Level-2 units, but the slopes (or regression coefficients) do not vary. The model involved: (i) job satisfaction, and work engagement regressed respectively on teamwork; (ii) intention to remain regressed on teamwork, job satisfaction, and work engagement, respectively; (iii) patient

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satisfaction regressed on teamwork, job satisfaction, work engagement, and intention to remain, respectively; and (iv) all indirect effects from teamwork to patient satisfaction, via job satisfaction and work engagement in series with intention to remain. Indirect effects ( $\alpha\beta$ ) were estimated on the basis of the product-of-coefficients approach, which overrides some of the difficulties (e.g., violations of normality) presented by the more traditional causal steps approach (MacKinnon, Lockwood, Hoffman, West & Sheets, 2002).

Hypotheses 5a and 5b were examined simultaneously by a single conditional indirect effects model. Conditional indirect effects models are those in which the effect of a predictor on an outcome via one or more mediators is moderated by another variable (Edwards and Lambert, 2007; Stride, Gardner, Catley and Thomas, 2015). For instance, our model examined whether the indirect effect of teamwork on patient satisfaction, via employee well-being (job satisfaction and work engagement) linked serially with intention to remain, was moderated by training. The model involved: (i) job satisfaction and work engagement regressed respectively on teamwork, training and the interaction term between teamwork and training; (ii) intention to remain regressed on teamwork, job satisfaction, and work engagement, respectively; and (iii) patient satisfaction regressed on teamwork, job satisfaction, work engagement, and intention to remain, respectively.

We then calculated two sets of conditional indirect effects. The first set, which includes the moderating influence of training on the indirect relationship between teamwork and patient satisfaction, via job satisfaction and work engagement (but bypassing intention to remain), was estimated by the sum of two regression paths " $\alpha_1*\beta_1+\alpha_3*\beta_1$ "; where  $\alpha_1$  represents the regression coefficient of teamwork on the employee well-being measures,  $\alpha_3$  represents the regression coefficient of the interaction term between teamwork and training on the well-being measures,

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and  $\beta_1$  represents the regression coefficient of the well-being measures on patient satisfaction.

The second set of conditional indirect effect includes the moderating influence of training on the indirect relationship between teamwork and patient satisfaction, via job satisfaction and work engagement in series with intention to remain. This effect was estimated by the sum of two regression paths “ $\alpha_1*d_1*\beta_2+\alpha_3*d_1*\beta_2$ ”; where  $d_1$  represents the regression coefficient of the employee well-being measures on intention to remain, and  $\beta_2$  represents the regression coefficient of intention to remain on patient satisfaction.

### Results

Table 2 shows bivariate correlations among our study variables. The correlations between employees’ perceptions of teamwork and both employee well-being variables, job satisfaction ( $r = 0.66, p < 0.01$ ) and work engagement ( $r = 0.45, p < 0.01$ ) are significant and positive. Teamwork is also positively correlated with intention to remain ( $r = 0.43, p < 0.01$ ) and patient satisfaction ( $r = 0.03, p < 0.01$ ), though the effect size for the latter is rather marginal. Both employee well-being measures are strongly correlated with each other ( $r = 0.53, p < 0.01$ ), and positively correlated with intention to remain and patient satisfaction, respectively (see Table 2). Intention to remain and patient satisfaction are positively correlated, whereas training has positive correlations with all study variables (also Table 2).

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Insert Table 2 about here  
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Part ‘A’ of Table 3 shows standardized regression coefficients for the direct relationships in our model. It can be seen from the table that employees’ experience of teamwork has direct positive relationships with job satisfaction ( $\beta = 0.66, p < 0.001$ ) and work engagement ( $\beta = 0.45,$

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$p < 0.001$ ). These direct relationships thus provide full support for Hypotheses 1a and 1b. Job satisfaction ( $\beta = 0.39, p < 0.001$ ) and work engagement ( $\beta = 0.31, p < 0.001$ ) both have direct positive associations with intention to remain, providing support for Hypotheses 2a and 2b. We also found support for Hypothesis 3, as the direct relationship between intention to remain and patient satisfaction is positive ( $\beta = 0.05, p < 0.001$ ).

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Insert Tables 3 about here  
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Part 'B' of Table 3 presents results of all indirect relationships in our model. This part of the table shows all five possible indirect paths are statistically significant, albeit by marginal effect sizes. The indirect path from employees' experience of teamwork to patient satisfaction, passing through job satisfaction and bypassing intention to remain, is significant and positive (see Part B, Table 3). However, the indirect path from teamwork to patient satisfaction, passing through work engagement and bypassing intention to remain, is significant and negative. Thus, the two well-being variables, by themselves, are shown to have contrasting mediating roles, one positive and the other negative. The negative indirect path involving work engagement illustrates an inconsistent mediation effect (MacKinnon, Krull, & Lockwood, 2000) or a suppression effect (Conger, 1974). Accordingly, teamwork's predictive relationship with patient satisfaction increases due to its strong correlation with work engagement and the negligible correlation between work engagement and patient satisfaction.

The indirect path from teamwork via intention to remain to patient satisfaction is significant and positive. As with job satisfaction, intention to remain by itself appeared to have a positive mediating role. Furthermore, when the indirect path from teamwork to patient

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satisfaction is considered via job satisfaction in series with intention to remain, a positive relationship is observed (Part B, Table 3). Similarly, the indirect path from teamwork to patient satisfaction, via work engagement in series with intention to remain, is also significant and positive (Part B, Table 3). We thus establish support for Hypotheses 4a and 4b. By way of interpretation, these positive serial indirect relationships suggest that healthcare workers whose teamwork experience had positively affected their well-being are likely to have lower turnover intentions, and this in turn has a positive knock-on effect on patient satisfaction. Since we also find a non-significant direct relationship between teamwork and patient satisfaction, our analysis illustrates full serially mediated paths.

Part 'C' of Table 3 shows the results of Hypotheses 5a and 5b, the conditional indirect effects model examining whether training enhances teamwork's indirect relationship with patient satisfaction via employee well-being and intention to remain. As shown in Part C of Table 3, teamwork and training interact positively to influence the indirect paths via job satisfaction and intention to remain to patient satisfaction ( $\beta = 0.02, p < 0.001$ ). This result highlights training's positive but marginal enhancing influence on teamwork's indirect relationship with patient satisfaction via job satisfaction and intention to remain. To verify the precise nature of this moderated indirect effect, we performed simple slopes analysis (Preacher, Curran & Bauer, 2003) to determine whether the effect differs significantly from zero for three conditional values of the moderator: low training (i.e., one standard deviation below the mean estimate for training), medium training (the mean estimate for training), and high training (one standard deviation above the mean estimate for training). Simple slopes analysis revealed that the gradients of the interaction lines are significantly different across low, medium, and high levels of training (see Figure 2). Thus, higher levels of training are sufficient to amplify any positive indirect

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relationship between teamwork and patient satisfaction, via job satisfaction and intention to remain.

Similarly, teamwork and training are found to have a significant and positive interaction effect on the indirect paths via work engagement and intention to remain to patient satisfaction ( $\beta = 0.01, p < 0.001$ ). Figure 3 depicts a simple slopes graph showing the moderating influence of training (though marginal) is positive when the indirect relationship between teamwork and patient satisfaction is transmitted through work engagement and intention to remain. In all, our analysis found full support for Hypotheses 5a and 5b. We infer that training amplifies the positive indirect relationship between employees' perceptions of teamwork and patient satisfaction, via employee well-being and intention to remain.

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Insert Figures 2 and 3 about here  
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## **Discussion**

In this paper, we used an organizational support lens to examine the indirect influence of employees' experience of teamwork on patient satisfaction via employee well-being and intention to remain employed by the organization. We also examined the moderating effect of training on these indirect relationships. Our study differs from previous research in two unique ways: (i) by conceptualizing perceived organizational support in terms of social/coworker support experienced based on employees' involvement in teams and skill-enhancement support derived from staff training, and (ii) highlighting the simultaneous roles of employee well-being and intention to remain in promoting patient satisfaction within healthcare.

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The results, using data from the British NHS, show that employees' teamwork perceptions are positively associated with their reports of job satisfaction and work engagement. The positive relationship found between teamwork perceptions and employee well-being corroborates a growing consensus that the level of social support experienced in collaborative work team arrangements improves the quality of employees' functioning at work (Major et al., 1995; van Mierlo et al., 2005). Our study thus deviates from an emerging critical literature linking teamwork to poor employee well-being (e.g., Cruz & Pil, 2011). Critics of teamwork's role in shaping positive employee attitudes believe it may instead induce negative well-being effects due to high work demands, peer pressure or interpersonal conflict, and the possibility for social loafing behaviors among team members. Although we do not directly invalidate such critical views, our analysis presents healthcare employees' experience of teamwork in a positive light, noting its relevance as an important factor for promoting job satisfaction and work engagement.

Another important conclusion from the present study relates to the positive influence of employees' teamwork perceptions on their intention to remain employed by the organization. The quality of social relationships and support generated by teamwork activities play a vital role in reducing employees' withdrawal tendencies towards the organization. Based on OST, employees who form positive perceptions about the level of support experienced in work activities are less likely to withdraw membership from the organization (Kurtessis et al., 2015; Rhoades & Eisenberger, 2002). The tendency for reduced organizational withdrawal, in this regard, reflects a type of reciprocal loyalty associated with employees' perceived obligation to behave in a manner consistent with organizational performance (Geurts et al., 1998). Research has also shown improved employee well-being is fundamental to minimizing employees'

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intention to leave an organization (Schaufeli & Bakker, 2004; Tett & Meyer, 1993). It is argued that employees' sense of attachment toward the organization develops from their perceived well-being, and this often translates into reduced withdrawal behaviors. The present study supports these assumptions as our well-being measures, job satisfaction and work engagement, are directly and positively associated with employees' perceived attachment toward the organization. The practical implication of our finding is that employees' affective evaluation of their job, as with their positive experience of teamwork, is uniquely relevant to an organization's turnover process.

Although research in healthcare indicates effective teamwork is likely to promote hospital efficiency and improved patient experience of care (Sedki et al., 2015; So et al., 2011), we did not find a significant direct relationship between employees' teamwork perceptions and patient satisfaction. Instead, our study showed perceptions of teamwork have a positive indirect influence on patient satisfaction, explained by job satisfaction and intention to remain. Despite the somewhat marginal sizes of these effects, these results lend additional support to previous findings suggesting that employees' exposure to collaborative team processes is crucial for both employees' and patients' satisfaction (Ogbonnaya & Valizade, 2016). While the overall size of the effect may be small, we are fairly certain that the estimate is positive as it did not include zero ( $p < .001$ ), which was not the case for some of the other effects in our model.

Unlike the indirect effect of teamwork perceptions through job satisfaction, the indirect relationship between employees' experience of teamwork and patient satisfaction, via work engagement by itself, was significant and negative. This finding is surprising given previous evidence linking employee engagement to improved customer (or patient) satisfaction (e.g., Harter, Schmidt & Hayes, 2002). However, our finding demonstrates a fundamental case of



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suppression effect (Conger, 1974; MacKinnon et al., 2000). Accordingly, teamwork is strongly associated with work engagement, whereas work engagement has a negligible association with patient satisfaction. When work engagement is examined as mediator, it accounts for a larger portion of the variance in teamwork, thereby increasing teamwork's predictive relationship with patient satisfaction. In this sense, the indirect relationship between employees' teamwork perceptions and patient satisfaction is not necessarily explained by work engagement. Instead, work engagement strengthens the teamwork–patient satisfaction relationship by essentially cleansing the measurement errors between them, but ends up with a negative coefficient itself.

Interestingly, the indirect influence of teamwork perceptions on patient satisfaction via employee well-being in sequence with intention to remain was significant and positive. The positive indirect effect was found for both measures of well-being: job satisfaction and work engagement. From an OST perspective, we interpret this result as an indication that employees' experience of effective teamwork may indeed generate perceptions of organizational support. Effective teamwork triggers perceptions of organizational support through its main characteristics, including opportunities for social interactions, collaborative decision-making and shared responsibility. Where employees in such teams perceive a degree of organizational support, their levels of job satisfaction and work engagement are enhanced, and this in turn reduces any withdrawal behaviors directed towards the organization. The consequence of this, particularly for healthcare workers, is to promote positive and favorable interactions with patients. Thus, we convey a practical message to leaders and managers of healthcare – that effective teamwork is fundamental for shaping employees' experience of meaningful work. We recognize that healthcare institutions are increasingly faced with complex and multidisciplinary work activities, and the use of teamwork has become commonplace, if not inevitable (So et al.,

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2011). Success in the teamwork process is attainable and linked with the degree to which employees might develop perceptions of organizational support. The more team members are able to support each other and work collaboratively together, the more likely they are to experience well-being and provide services consistent with quality patient-centered care.

To highlight an important condition under which teamwork in healthcare might improve both employee- and patient-related outcomes, we examined the moderating impact of training offered by the organization to enhance key aspects of employees' skills. While small in magnitude, we found evidence to suggest employees' experience of teamwork and training interact positively and amplify the indirect influence on patient satisfaction through employee well-being and intention to remain. These positive indirect relationships were observed for both job satisfaction and work engagement, our two measures of employee well-being. Staff training initiatives, particularly those covering a broad range of skills needed for employees to perform well at their job, represent a major investment in human capital (Barling et al., 2003). When introduced alongside effective teamwork, training enhances employees' skills and experience of meaningful work, leading to improved well-being. The improvements in well-being generated through this process cause employees to perceive that the organization desires to promote quality relationships with workers. Based on norm of reciprocity, employees respond through higher levels of attachment toward the organization and feel obligated to help the organization achieve superior healthcare performance.

The theoretical implication of the present study relates to the application of the basic principles of OST in understanding the direct and indirect antecedents of patient satisfaction, which is an important performance measure in healthcare. Our results support the notion that perceptions of organizational support stimulate healthcare employees to form positive beliefs

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about the extent to which they are valued and respected by the organization. Perceived organizational support increases employees' well-being and intent to remain with the organization, and consequently, their tendency to perform well and promote positive patient outcomes. From a practical standpoint, workplace practices such as teamwork (social support) and training (support for skill enhancement) are identified in the present study as crucial activities for shaping healthcare workers' perceptions of organizational support, and in turn, their positive interactive relationships with patients. Although a note of caution is due here since the magnitudes of the effects (i.e., the regression coefficients) on patient satisfaction are relatively modest, our study is novel in acknowledging the idea that there are likely cross-level processes associated with employees' workplace experiences and healthcare performance. Given our data were collected at a population level, even a relatively small regression coefficient provides important knowledge for organizations to determine how workplace resources might be deployed when aiming to improve both employee well-being and healthcare performance.

### **Limitations and Directions for Future Research**

As with any research, our study has some limitations worth highlighting. Most prominent among these is that the magnitude of our findings on patient satisfaction is relatively small. Although we acknowledge the desirability and practical importance of stronger regression effects, the problem of relatively small effects is not uncommon in multilevel research. In multilevel analysis, measurement errors are likely to be higher among Level-2 constructs and lower among Level-1 measures, leading to expectations of relatively small cross-level regression coefficients (Croon, Van Veldhoven, Peccei & Wood, 2015). In spite of the robust analytical procedures adopted in our analysis to ensure reliability and validity of our study variables, the ratio of our Level-2 sample size (162 NHS Trust) to the Level-1 sample size (66,930 employees)

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implies little could be done analytically to avert the small actual effects on patient satisfaction.

Nonetheless, since both the NHS Staff and Adult Inpatients surveys are representative of the British healthcare system, our relatively marginal effects are practically important when applied to the British context as a whole. Another limitation of our study relates to the cross-sectional nature of the data, which precluded us from answering questions pertaining to causality. For example, we were unable to determine how patients' experience of healthcare might be influenced by changes in employees' working conditions over time.

The above stated issue on causality may be addressed in future studies. It might be useful, for example, to track workers in particular healthcare organizations and determine whether their teamwork and training experiences at one period in time affects their well-being and patient outcomes over time. The dynamic picture of individual-level change derived from such a study may be compared to the population-level relationships observed in our study. Moreover, the OST framework outlines other social, economic, and environmental support mechanisms, which for practical reasons have not been considered in the present study. Further research is needed to better understand how other organizational processes, beyond social support from teamwork and skill-enhancement support from training, might influence employee well-being and performance in the healthcare context. For example, healthcare workers' intrinsic motivation and pre-existing levels of vocational commitment have been identified as key ingredients for creating psychologically healthy work environments. At the same time, ergonomic characteristics such as clean hospital conditions, safe and coordinated patient-handling procedures, might influence both employee well-being and the quality of services that patients receive.

Another area for future research is to examine the different types of training likely to influence perceptions of organizational support. Whilst our study found evidence that training is

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beneficial for employees' experience of workplace support, it is possible that different aspects of training (e.g., the content, the provider, and the frequency) affect outcomes differently. Finally, to give more insights into the cross-level mechanisms influencing employee outcomes and healthcare performance, future studies may also consider other metrics of organizational performance in the healthcare context such as patient safety and mortality measures.

### **Conclusion**

This study has applied existing knowledge on perceived organizational support to our understanding of employee well-being and performance in the healthcare context. To this end, the study focused on two aspects of organizational support. The first, concerned with the social support experienced in team-based activities, had direct and indirect relationships with employee well-being and patient satisfaction, respectively. The second, concerned with skill-enhancement support from training, enhances these relationships significantly. Our results underscore the importance of perceived teamwork in improving two measures of employee well-being, job satisfaction and work engagement. The experience of teamwork in healthcare also had a role in improving employees' sense of attachment towards the organization. Although previous research has linked employees' experience of teamwork directly to patient outcomes, the present study showed teamwork is not directly associated with patient satisfaction, except through a serial mediation process involving employee well-being and intention to remain. In addition, healthcare organizations that provide opportunities for staff training can achieve improvements in employee well-being and quality of services offered to patients.

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**Table 1.** Descriptive statistics, factor loadings, Cronbach's alpha ( $\alpha$ ), Composite Reliability (CR) and Average Variance Explained (AVE)

Variables	Observed Items	Mean	SD	Factor loadings	$\alpha$	CR AVE	Response Scale
Teamwork	Do team members have a set of shared objectives?	3.81	0.84	0.50	0.78	0.76 0.46	1 = 'Strongly disagree' to 5 = 'Strongly agree'
	Do team members often meet to discuss the team's effectiveness?	3.43	1.10	0.59			
	I am involved in making changes that affect my team.	3.20	1.13	0.68			
	I feel I belong to a team.	3.88	0.85	0.64			
	I am able to make suggestions to improve the work of my team.	3.69	0.86	0.71			
Job satisfaction	How satisfied are you with the recognition you get for good work?	3.15	1.06	0.73	0.84	0.82 0.53	1 = 'Very dissatisfied' to 5 = 'Very satisfied'
	How satisfied are you with the freedom you have to choose your own method of working?	3.56	0.97	0.66			
	How satisfied are you with the amount of responsibility you are given?	3.72	0.87	0.66			
	How satisfied are you with the opportunities you have to use your abilities?	3.63	0.94	0.67			
	How satisfied are you with the extent to which your employer values your work?	2.95	1.05	0.71			
Work engagement	I look forward to going to work.	3.49	0.98	0.91	0.80	0.79 0.57	1 = 'Never' to 5 = 'Always'
	I am enthusiastic about my job.	3.88	0.93	0.78			
	I feel like time passes quickly when I am working.	4.09	0.93	0.53			
Intention to remain	I often think about leaving this Trust.	3.23	1.20	0.93	0.92	0.85 0.66	1 = 'Strongly agree' to 5 = 'Strongly disagree'
	I will probably look for a new job in the 12 months.	3.45	1.14	0.83			
	As soon as I can find another job, I will leave this Trust.	3.61	1.12	0.84			
Patient satisfaction	Overall did you feel you were treated with respect and dignity?	-	-	0.96	0.91	0.98 0.95	Aggregated mean scores
	How would you rate how well the doctors and nurses worked together (from poor to excellent)	-	-	0.98			
	Overall, how would you rate the care you received (from poor to excellent)	-	-	0.99			
Training	Have you had any equality and diversity training, paid for or provided by your Trust?	1.28	0.80	0.60	0.71	0.70 0.42	0 = 'No' 1 = 'Yes, more than 12 months ago' 2 = 'Yes, in the last 12 months'
	Have you had any health and safety training, paid for or provided by your Trust?	1.78	0.50	0.53			
	Have you had any training in how to handle violence and aggression, paid for or provided by your Trust?	1.03	0.82	0.52			
	Have you had any training in on infection control, paid for or provided by your Trust?	1.68	0.60	0.57			
	Have you had any training on how to handle confidential information, paid for or provided by your Trust?	1.50	0.73	0.58			

Sample Size ( $N$ ): 66,930 employees nested within 162 NHS Trusts.

Model fit: Chi-square ( $\chi^2$ ) = 5786.531; degrees of freedom ( $df$ ) = 230; p-value < 0.001; RMSEA = 0.02; CFI = 0.95; TLI = 0.94; SRMR = 0.02

**Table 2.** Correlations among study variables

<i>Variables</i>	Means	SD	1	2	3	4	5	6
1 Teamwork	3.61	0.70						
2 Job satisfaction	3.40	0.76	0.66**					
3 Work engagement	3.82	0.78	0.45**	0.53**				
4 Intention to remain	3.41	1.07	0.43**	0.57**	0.53**			
5 Patient satisfaction	3.65	0.14	0.03**	0.04**	0.01*	0.06**		
6 Training	1.46	0.47	0.21**	0.19**	0.15**	0.14**	0.05**	

Sample Size (N): 66,930 employees nested within 162 NHS Trusts.

\* =  $p < .05$ ; \*\* =  $p < .01$

**Table 3.** Teamwork, employee attitudes and patient satisfaction: Direct and indirect paths

<i>PART A: Direct relationships</i>	<i>Coefficients</i>
Teamwork → Job satisfaction	0.66***
Teamwork → Work engagement	0.45***
Teamwork → Intention to remain	0.05***
Job satisfaction → Intention to remain	0.39***
Work engagement → Intention to remain	0.31***
Teamwork → Patient satisfaction	0.00
Job satisfaction → Patient satisfaction	0.01*
Work engagement → Patient satisfaction	-0.02***
Intention to remain → Patient satisfaction	0.05***

  

<i>PART B: Indirect relationships</i>	<i>Coefficients</i>
---------------------------------------	---------------------

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Teamwork → Job satisfaction → Patient satisfaction	0.01*
Teamwork → Work engagement → Patient satisfaction	-0.01***
Teamwork → Intention to remain → Patient satisfaction	0.00***
Teamwork → Job satisfaction → Intention to remain → Patient satisfaction	0.01***
Teamwork → Work engagement → Intention to remain → Patient satisfaction	0.01***
<hr/>	
<i>PART C: Moderated relationships</i>	<i>Coefficients</i>
Teamwork*Training → Job satisfaction	0.02
Teamwork*Training → Work engagement	0.01
Teamwork*Training → Job satisfaction → Patient satisfaction	0.01
Teamwork*Training → Work engagement → Patient satisfaction	-0.02***
Teamwork*Training → Job satisfaction → Intention to remain → Patient satisfaction	0.02***
Teamwork*Training → Work engagement → Intention to remain → Patient satisfaction	0.01***

Sample Size (*N*): 66,930 employees nested within 162 NHS Trusts.

Proportion of variance explained:  $R^2$  Job satisfaction = 0.43;  $R^2$  Work engagement = 0.20;  $R^2$  Intention to remain = 0.36;  $R^2$  Patient satisfaction = 0.25.

\* =  $p < .05$ ; \*\*\* =  $p < .001$ .