

## Review

# Gender, age, and pharmacists' job satisfaction

Manuel J. CARVAJAL , Ioana POPOVICI 

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### Abstract

A comprehensive literature review was conducted on the concept of job satisfaction in the pharmacist workforce field and the facets it comprises, as well as its measurement, aiming to (i) review the nature, mechanisms, and importance of job satisfaction in the context of the pharmacist workforce, (ii) survey some of the most salient facets that configure job satisfaction, and (iii) discuss validity and measurement issues pertaining to it.

Although female pharmacists generally hold less appealing jobs, earn lower wages and salaries, and are promoted less frequently than their male counterparts, they report higher levels of job satisfaction. Age has a U-shape effect on job satisfaction, with middle-age pharmacists less satisfied than both younger and older practitioners. Workload, stress, advancement opportunities, job security, autonomy, fairness in the workplace, supervisors, coworkers, flexibility, and job atmosphere are facets contributing to pharmacists' job satisfaction. Finally, discrepancy exists among researchers in measuring job satisfaction as a single global indicator or as a composite measure derived from indices of satisfaction with key aspects of a job.

Understanding the mechanisms that affect pharmacists' job satisfaction is important to employers in their pursuit to respond to practitioners' needs, decrease turnover, and increase productivity. As pharmacists' response to work-related conditions and experiences depends on gender and age, a unique set of rewards and incentives may not be universally effective. Additional research into the dynamics of the forces shaping pharmacists' perceptions, opinions, and attitudes is needed in order to design and implement policies that allocate human resources more efficiently within the various pharmacy settings.

### Keywords

Pharmacists; Health Manpower; Job Satisfaction; Attitude of Health Personnel; Sex Factors; Age Factors

## INTRODUCTION

Pharmacists' job-related perceptions and opinions are shaped by their experiences in the workforce. These experiences vary systematically, and are interpreted differently, by both genders and diverse age groups. They influence how much practitioners enjoy their work and affect their labor supply. Together they configure the array of advantages and disadvantages of employment opportunities known as job satisfaction.

The purpose of this article is to dwell into the concept of job satisfaction and its relevance to the pharmacist workforce. First, the nature, mechanisms, and importance of job satisfaction are reviewed. Second, some of the most salient facets configuring it are surveyed. Then issues pertaining to validity and measurement are discussed. Throughout the article frequent comparisons are made between genders and among age groups.

## JOB SATISFACTION

Over the last 20 years, job satisfaction has become recognized as a proxy for pharmacists' job-related utility.<sup>1-4</sup> It is a comprehensive concept that measures practitioners' self-appraised well-being at work stemming from what has happened to them in a position or work setting. Workers who perceive themselves being happier with their job are said to be more satisfied.<sup>5</sup>

Job satisfaction affects labor market outcomes. It has been

linked positively to motivation, performance, productivity, organizational commitment, and patient safety and satisfaction, and linked negatively to absenteeism, tardiness, complaints and grievances against management, theft, and job turnover.<sup>6-13</sup> Excessive turnover is costly to employers. Its direct costs include, among others, workers' loss of job performance and productivity; interviewing candidates; advertising and other recruitment expenses; selecting, hiring, and training the new employees; overtime wages to cover vacant positions; and management time to rearrange schedules. In addition, indirect costs include loss of social networks, increased reliance on inexperienced or overworked employees, insufficient staffing, and low morale.<sup>14-16</sup>

More satisfied practitioners tend to see their organization positively. They are grateful to their employer for providing a fulfilling job and are less likely to leave voluntarily, compared with less satisfied workers. They tend to invest in firm-specific human capital, which increases their organizational commitment.<sup>17</sup> Conversely, unfulfilled workers often express their dissatisfaction through unproductive and dysfunctional behavior. Practitioners exhibiting higher levels of satisfaction work more hours at the same wage rate than their peers reporting less satisfaction. Hence, pharmacists' contentment with their job has important implications for both performance and organizational management.

A gender incongruity, known as the paradox of the contented female worker, is related to the conceptualization of job satisfaction. Although women generally hold less appealing jobs, earn lower income, and are promoted less frequently than their male counterparts, they report higher levels of job satisfaction.<sup>18-21</sup> A plausible explanation for this incongruity may be that since women

**Manuel J. CARVAJAL.** Department of Sociobehavioral and Administrative Pharmacy, College of Pharmacy, Nova Southeastern University, Fort Lauderdale, FL (United States) cmanuel@nova.edu.  
**Ioana POPOVICI.** Department of Sociobehavioral and Administrative Pharmacy, College of Pharmacy, Nova Southeastern University, Fort Lauderdale, FL (United States). ioana.Popovici@nova.edu

are primarily in charge of housework and childcare, they feel less pressure to succeed at work than men, who commonly are viewed as responsible for the household's financial well-being. Perhaps women who are dissatisfied with their job choose more readily than men to change employers, work fewer hours, or leave the workforce altogether to devote more time to their family, and consequently their dissatisfaction does not appear in survey results.

Another plausible explanation for this phenomenon may be that women have lower expectations than men about labor outcomes, so their goals are fulfilled more easily.<sup>22</sup> If female pharmacists only compare their outcomes to the outcomes of their female peers, their accomplishments may be less demanding vis-à-vis male pharmacists' accomplishments. Furthermore, insofar as job-related subjective rewards, which are distributed more equitably between the genders than objective rewards, are more appealing to women than men, women may be more inclined to compensate the forgone satisfaction of jobs that pay less income and offer fewer advancement opportunities with social aspects such as interaction with patients, good supervisors, and congenial coworkers as well as scheduling flexibility, reduced stress, and proximity to the workplace. The literature suggests that greater earnings add more to the job satisfaction of men than women.<sup>23,24</sup> Male and female pharmacists make job-related choices based on heterogeneous preferences over job characteristics, so the greater satisfaction of women may have its origin in special features, probably difficult to conceptualize and measure, that women value in their jobs. Policies designed to enforce equality in the gender composition of job characteristics may lead to a reduction in the job satisfaction of workers from both genders.<sup>25</sup>

A third explanation for the paradox of the contented female worker may be that gender disparities in job satisfaction reflect deeper differences in the occurrence of depression and despondency between the genders.<sup>26</sup> Women tend to respond to job inconformity by internalizing feelings of dejection rather than expressing their dissatisfaction openly. While men exteriorize more easily their job-related issues through protests, complaints, and grievances, women are more likely to transform these issues into signs of distress, especially related to work-family conflict. Thus, the greater prevalence of female than male professional work-induced depression may be a more relevant indicator of how men and women respond to disparities in income, promotion, and occupational status.

An incongruity also is apparent with age. Younger pharmacists generally are less satisfied, yet work more hours, than their older peers. This incongruity has been explained in terms of workers reducing their aspirations, and hence the satisfaction gap, as they grow older and realize that they face limited choices in the workplace.<sup>6,27</sup> Age has a U-shape effect on job satisfaction.<sup>20,21,28</sup> Initially younger workers may experience lots of satisfaction with their job because of low expectations; their limited labor market exposure does not allow them to assess accurately their working conditions. As they gain experience in their middle years, their expectations rise and their satisfaction drops as they are better able to judge their work. Beyond middle age, with a broader perspective of life and

approaching retirement, older workers tend to attach less importance to professional ambitions, or maybe they acquire a growing awareness of areas within their occupation from which they derive more satisfaction.<sup>29</sup> Perhaps with age they adapt better to the policies and working conditions of organizations for which they have worked over several years<sup>30</sup>, or they simply enjoy privileges such as more authority, autonomy, and occupational prestige not commonly found with younger workers.<sup>31</sup> An alternative explanation may be that the greater satisfaction of older workers results from a self-selection process; dissatisfied, mature workers tend to change jobs or retire while workers who remain in their jobs are the ones who experience more satisfaction.

## FACETS RELATED TO JOB SATISFACTION

Multiple facets contribute to pharmacists' job satisfaction and dissatisfaction. Ten of them are analyzed here: workload, stress, advancement opportunities, job security, autonomy, fairness in the workplace, supervisors, coworkers, flexibility, and job atmosphere.

### Workload

An inordinate workload is often identified as a source of dissatisfaction.<sup>1,2,4,11,13,32,33</sup> It has been linked to medication dispensing errors and restricts practitioners' interaction with patients<sup>34</sup>, thus jeopardizing the effectiveness of quality control mechanisms and adequacy of patient care. Workers who experience an excessive workload report feeling anger toward their employer, resenting their coworkers, searching for another job, undergoing work-related conflicts, and suffering more health problems as a result of being overworked.<sup>35</sup>

In the United States and other countries, many pharmacists perceive that their workload, frequently measured as the number of prescriptions dispensed per period of time, exhibits a secular rise. They see themselves as spending more time on dispensing and administrative functions instead of counseling and other clinical activities more appealing to them.<sup>36,37</sup> This trend may be partly attributable to an influx of new drugs for previously untreated illnesses as well as a greater array of medications for previously treated disorders.<sup>38</sup> In addition, the prevalence of chronic diseases is increasing because of a continuously rising life expectancy throughout the world, which increases the demand for pharmaceutical services. Curiously, although men often are assigned a heavier workload than women, women perceive their workload to be more burdensome than do men.<sup>39,40</sup>

### Stress

Excessive workload leads to stress<sup>2,11,27,41</sup>, which is related to practitioners' disillusionment, low levels of organizational commitment, and excessive turnover.<sup>42-44</sup> Stress involves feelings of work-related tension, anxiety, frustration, and emotional imbalance. It occurs when employees encounter negative working conditions or poor workplace relationships over which they have little or no control.<sup>45</sup> It may be caused by role ambiguity (the absence of clear guidelines for performing tasks), role conflict (managing multiple roles), excessive regulations, job

uncertainty, absence of constructive feedback from supervisors, inadequate staff support, job policies being enforced inconsistently, and lack of power, among other factors.<sup>46-49</sup> In countries where they are allowed to operate, chain and mass merchandiser pharmacists generally experience more job-related stress than independent pharmacists.<sup>50,51</sup>

Stack<sup>52</sup> identifies five progressive stages of job-related stress. The first is the physical stage, characterized by illness and fatigue. The second is the social stage; negativity, blaming others for things that go wrong, missing deadlines, and working through meals occur in it. Next is the cerebral stage, during which clock watching, minor accidents, absentmindedness, and indecisiveness are observed. Then comes the emotional stage, characterized by feelings of sadness and anger, crying, yelling, being overwhelmed, and depression. Finally, in the spiritual stage workers become somber, consider making drastic changes in their lives, have difficulties relating to other people, and cool off personal relationships. Workers experiencing heavy job-related stress blame their employer for it, which erodes organizational commitment and loyalty.<sup>44</sup>

Burnout is the ultimate expression of stress.<sup>6,33,53</sup> It is caused by chronic job-related stressors and is manifested via emotional exhaustion, depersonalization, and reduced personal accomplishments that pervade employees' non-work life aspects.<sup>54</sup> Common symptoms include feelings of helplessness; a cynical attitude toward authority symbols; progressive apathy; and anger toward patients, supervisors, and coworkers. Pharmacists and other healthcare professionals are susceptible to burnout because they relate to patients in emotionally demanding situations that expose them to patients' problems over the long run.<sup>55,56</sup> Women report enduring more stress in their job than men<sup>57</sup> and respond by working fewer hours, getting married at an older age, and having fewer children than their male peers.<sup>58</sup>

#### **Advancement opportunities**

Pharmacists' perception of available advancement opportunities increases job satisfaction.<sup>2,4,5,59</sup> The prospect of a future promotion may provide a compensating differential for pharmacists currently willing to accept a lower-paying job. Traditionally, pharmacists have been pessimistic about the availability of advancement opportunities within their place of employment, and the limitations have been expressed by practitioners of both genders<sup>60</sup>, although there seem to be more men than women in pharmacy management positions.

The glass ceiling is a term frequently used to describe the greater accessibility by men than women to managerial posts.<sup>61</sup> It refers to a metaphorical barrier preventing women from advancing in the organizational structure beyond a certain level. Yet it is not uncommon for women to show greater satisfaction than men with the promotions they receive<sup>62</sup>, along the lines of the paradox of the contented female worker discussed above. Female pharmacists may not be as interested as their male counterparts in getting promotions that often entail increased stress and work commitments inconsistent with their household responsibilities. Thus, notwithstanding the

presence of gender bias and discrimination that sometimes support glass ceilings, the more frequent promotion of men than women may be partly attributable to choice rather than a dearth of opportunities.

#### **Job security**

The perception of job security also increases pharmacists' job satisfaction.<sup>1,9,48</sup> A perceived risk of losing one's job, despite good performance, because of outsourcing, downsizing, relocation, or any other factor beyond practitioners' control has a deleterious impact on labor productivity, commitment, and other outcomes. Employees in organizations reducing the size of their workforce experience decreased motivation, low morale, lack of competence, and increased stress, all symptoms of what Brockner<sup>63</sup> calls the "survivor syndrome." They become suspicious of management, experience a drop in effectiveness to handle tasks, feel anxious about the future, and express less satisfaction. They engage in extreme risk avoidance, develop physical illnesses, and many end up resigning.<sup>39,64,65</sup>

Since women are more risk averse than men, they exhibit a greater level of satisfaction with job security.<sup>20,62</sup> Older workers also perceive a greater risk of job loss compared to younger workers<sup>28</sup>; this trend may reflect younger workers' relatively greater mobility, early in their careers, in search of the most suitable job for them. It also may reflect apprehension by older workers regarding their age-influenced, limited number of options available in the event of losing their job.

#### **Autonomy**

Autonomy is the ability to exercise one's judgment in conducting professional activities such as assigning priorities to pending tasks, using the necessary resources, and allocating time. Having more discretion over their work provides healthcare workers with a sense of responsibility conducive to caring more about what they do, building confidence in their abilities, generating feelings of pride, rendering a better quality output, and attaining higher levels of satisfaction.<sup>31,66-69</sup> Workers who think that they lack autonomy in their job feel less appreciated.<sup>70</sup>

The influence of autonomy on job satisfaction is stronger for female than male pharmacists<sup>71</sup>, although it is mediated by the number of hours worked. Men who work part time experience more job autonomy than women who work part time, but for pharmacists who work at least 40 hours per week, there are no significant gender differences. Furthermore, men's perception of the importance of job autonomy declines as the number of hours worked rises, but no such trend is detected for women.<sup>60</sup> There is also evidence that fewer female than male physicians are satisfied with autonomy in their jobs<sup>57,72</sup>, and community pharmacists perceive more autonomy compared to pharmacists working in hospitals and clinics.<sup>73</sup>

Gender differences in the perception of autonomy may be attributed to differences in how men and women interpret their actualized self. Men tend to define their selves through separation from others as part of their own identity and search for jobs that provide independence in performing tasks and allow them to experience satisfaction

through self-actualization opportunities. In contrast, women are happier in jobs that allow them to pursue care and connectedness with others within their rational self-definition because they are more likely than men to develop connected selves. Generally women are more interested in establishing interpersonal relationships, including working with others, than in pursuing self-actualization.<sup>74</sup>

### Fairness in the workplace

Perceived disparities in how practitioners are treated account for a substantial portion of job dissatisfaction.<sup>5,75</sup> It is important to distinguish between unfairness and inequality. Inequality is a de facto situation partly resulting from a mismatch between labor supply, marked by heterogeneous workers, and labor demand, marked by heterogeneous employers. Presumably the better the match between the supply of and demand for labor (i.e., structures are flexible, information is free flowing, etc.), the less inequality there is in the distribution of income and benefits within a profession such as pharmacy.<sup>76</sup> In addition, disparities in human-capital stock and job-related preferences contribute to observed inequalities in income distribution.<sup>77</sup> Thus, inequality responds to the nature and intensity of organizational and workforce heterogeneity within the profession.<sup>78</sup>

The focus here is not on inequality but on unfairness. There are two mechanisms involved in the interpretation of fairness. One is distributive justice, which refers to perceptions regarding the distribution of decision outcomes (i.e., who gets recognition, pay raises, promotions, etc.); distributive justice prevails when outcomes are congruent with workers' expectations. The other mechanism, procedural justice, has to do with the methods used by the organization to distribute outcomes. Procedures are perceived as fair when they are bias free and applied consistently across individuals through time, when they allow for accurate representation of the opinions and arguments of affected individuals, and when corrective mechanisms are in place in the event that the wrong decision be made.<sup>79</sup>

Perceptions of fairness in the workplace have been linked to positive labor outcomes, which strengthen organizational commitment and trust in management. Conversely, perceived disparities in the treatment of fellow workers lead to attitudes of pessimism and excessive turnover, which are associated with feelings of lower prestige and power at work, career uncertainty, and increased work-related conflict.<sup>80-82</sup> Yet while managers may influence the satisfaction of their pharmacists by implementing fair procedures when allocating rewards and resources, fair procedures in the workplace do not necessarily guarantee positive outcomes, including job satisfaction; negative affectivity makes some individuals perceive conditions adversely regardless of what may be happening.<sup>83</sup> Self-perceived status moderates the relationship between procedural fairness and job satisfaction; the higher the self-perceived status, the stronger the positive link between both variables.<sup>84</sup>

### Supervisors

Support from one's supervisor is another facet related to practitioners' satisfaction.<sup>4,7,85-87</sup> Support may be expressed in numerous ways; rendering information, creating teams and encouraging individuals to work together, setting reasonable goals, providing technical assistance and adequate facilities, and conveying feelings of empathy and emotional backing are a few examples.<sup>43,88,89</sup> Support from supervisors adds to pharmacists' contentment by increasing confidence and reducing anxiety. Perceptions of such support empower pharmacists<sup>90</sup>, which fosters organizational commitment; practitioners who work in independent settings receive more support from their supervisors than those who work in hospitals or chain pharmacies, and consequently are more empowered.

Supervisors play a decisive role in fostering job environments conducive to employees' self-development. Supportive supervisors encourage workers to voice their opinions and concerns, provide positive feedback, and put in place participative strategic planning processes that contribute to organizational effectiveness.<sup>91</sup> They also praise deserving employees; workers who receive recognition and praise respond by increasing their productivity and satisfaction.<sup>92</sup>

Managers are responsible for enhancing the individual self-esteem of pharmacists under their supervision and raising organization-based self-esteem, defined as individuals' self-perceived value working with the institution.<sup>93</sup> This may be accomplished by taking into account workers' suggestions about improving conditions at work; providing emotional support to employees and showing genuine interest in their personal welfare; relating raises and promotions to employees' contributions to the organization; and eliminating restrictions and procedures deemed unnecessary, burdensome, or inconsequential. Workers with higher organization-based self-esteem levels perceive themselves as more important and worthwhile, and are more productive and effective, than workers with lower levels of organization-based self-esteem.

Gender plays a role in perceiving supervisors' support. Proportionately more women than men consider supervision issues important, and more women than men value workplace social support.<sup>62</sup> Supervisors' actions directed toward mentoring junior professionals also are perceived to be more valuable by women than by men.<sup>19</sup> Help and support by supervisors increase female pharmacists' job satisfaction but is not perceived as relevant by male pharmacists.<sup>71</sup> Moreover women supervisors who perceive themselves as holding greater responsibility and trust by their employer improve their job performance and supervise employees more closely than female supervisors who do not perceive themselves in such a way.<sup>94</sup>

### Coworkers

Coworkers are organization members with whom pharmacists interact in performing their job and who have approximately the same level of power and authority. They are influential in the work environment<sup>95</sup> because they provide a dynamic communication conduit. While formal channels of communication within an institution transmit

orders and instructions from the top down and information, feedback, and suggestions from the bottom up, coworkers constitute an informal network characterized by a horizontal exchange flow. Employees prefer to communicate and discuss work-related issues with their peers rather than with supervisors; coworkers are the most common source of job-related support identified by employees.<sup>96</sup>

Good relations with coworkers are conducive to greater pharmacists' satisfaction.<sup>3,5,10,41</sup> Trust in coworkers contributes to the attainment of organizational outcomes and decreases turnover intention.<sup>97,98</sup> Insofar as they consider their peers' perceptions worthwhile and socially acceptable, practitioners' trust in their coworkers leads to trust their employer. These perceptions become more relevant in periods of uncertainty, when workers are not sure about what goes on at work; during such times they look toward one another for information and guidelines about how to cope with unfamiliar situations, which fosters greater awareness and mutual support.<sup>99</sup>

A concept applicable to relations with coworkers is the norm of reciprocity, which states that people will respond to others in the same way they are treated. When a worker feels helped and supported by his/her peers, the norm of reciprocity suggests that he/she responds by helping and supporting others. Favorable treatment carries the expectation that the debt will be repaid with similar treatment, even if the nature and timing is not clear. Pharmacists who adhere to the norm of reciprocity contribute to the stability and good will of the workgroup and the smooth functioning of the organization.<sup>81,100,101</sup>

### Flexibility

Scheduling flexibility is another facet intimately related to the job satisfaction of pharmacists.<sup>10,85,102,103</sup> It is associated with fewer stressors and less burnout, and allows practitioners to accommodate nonwork-related activities valuable to them.<sup>104</sup> It may take different forms: working more or fewer hours per day, working different days each week, greater discretion over when or where to work, etc. Some role and practice settings such as administrative, consulting, and teaching are more suitable for flexible work arrangements than others (i.e., dispensing).

Scheduling flexibility is attractive to women, especially younger women, because it enables them to pursue household-related work and care for children and elderly family members.<sup>18,23,105,106</sup> It also is attractive to older pharmacists of both genders because it facilitates their transition into phased retirement as they reduce gradually the intensity of their work effort.<sup>107</sup> Several studies recommend that employers develop and implement programs that offer more flexibility to their employees, not only pertaining to work hours and scheduling matters but also to rewards, family issues, and matching individual competencies with job requirements.<sup>108-110</sup>

### Job atmosphere

Also known as organizational climate, job atmosphere captures the extent to which harmony pervades operational and interpersonal relations in an institution. It gauges workers' views regarding their job environment and

whether they see it as beneficial or detrimental to their well-being. The specific focus is on the organization's typical practices and behaviors that prevail in the perception of its members, especially those connected with expectations and rewards. Job atmosphere is a major contributor to pharmacists' satisfaction and dissatisfaction.<sup>31</sup>

Some characteristics of a healthy job atmosphere include workers looking forward to going to work, agreeing with their organization's operating values, providing extra effort and input hours when required, trusting and befriending their coworkers, acting as members of a team, feeling pride in collective achievements, and believing that their work contributes substantially to the team's success.<sup>111</sup> In this kind of environment new ideas are welcome and unnecessary rules are eliminated; management's thrust is on getting the best people to reach organizational goals rather than establishing self-serving lines of authority; and employees are encouraged to introduce innovations without constantly seeking approval from their supervisors, are given opportunities to participate in goal setting and planning, are recognized and rewarded for good performance, and know what is expected from them.<sup>112</sup> Consequently, practitioners tend to develop attitudinal commitments that lead to emotional, mental, and cognitive bonds with their employer, and these bonds are likely to be reflected in higher levels of performance and lower levels of absenteeism and turnover.<sup>44,64,113</sup>

Three types of commitment have been identified.<sup>114</sup> Continuance commitment occurs when practitioners remain with an organization because it would cost them more to leave than to stay. The second type, affective commitment, is emotional and occurs when practitioners want to remain with an organization. The third type, normative commitment, occurs when workers remain with an organization because they feel that it is the right thing to do. All three types involve a belief in, and acceptance of, the goals and values of the organization; willingness to exert considerable effort on behalf of their employer; and an explicit desire to continue doing their job.<sup>115</sup>

Conversely, workers' perceptions of organizational politics are detrimental to harmony in operational and interpersonal relations. Organizational politics is a term that refers to subjective assessments of self-serving work behaviors of individuals not sanctioned by authority; such perception may be fueled by uncertainty regarding organizational decisions, ambiguity of expectations, conflicting roles and procedures, and competition for scarce resources.<sup>116</sup> It is both divisive and narrow-minded, and usually aggravates both absenteeism and turnover.<sup>117</sup>

The ethical climate is an important subset of job atmosphere. It consists of perceptions shared by management and workers of what constitutes unethical behavior and how ethical transgressions should be handled.<sup>118</sup> Organizations perceived as having a permissive attitude toward employee deviance experience more unethical behavior issues than organizations perceived as having no tolerance toward deviance.<sup>119,120</sup> Two major categories of employee deviance have been identified: property deviance and production deviance.<sup>121</sup> Instances of property deviance include misuse of employee discounts;

taking supplies, merchandise, or information for sale or personal use; filching money; and falsifying records. Instances of production deviance include reductions in work time such as tardiness, absenteeism, abuse of sick leave, and unauthorized breaks or leaves of absence; they involve low levels of organizational commitment and lead to productivity drops.

Understanding the way pharmacists are treated, and perceived to be treated, by administrators, fellow pharmacists, technicians, other healthcare professionals, and patients is essential when configuring the workforce environment and assessing practitioners' organizational commitment. When workers are allowed to participate in the decision-making process, feel that the organization appreciates their contributions, and believe that supervisors and coworkers care about their well-being, the job atmosphere quality improves substantially.<sup>68,122,123</sup> Perceived support by employers fulfills workers' socioemotional needs and is interpreted by them as an indication that the organization rewards increased effort and performance.<sup>124,125</sup>

Women more than men tend to be affected by the job atmosphere quality.<sup>62</sup> Female pharmacists whose husbands are likely to earn higher levels of income than the wives of male pharmacists may feel less pressure when they downplay the importance of earnings and focus their attention primarily on working conditions, choosing jobs characterized by an absence of crises and conflicts, and good relations with supervisors and coworkers.<sup>105,126</sup>

## VALIDITY AND MEASUREMENT ISSUES

Notwithstanding its widespread use, the concept of job satisfaction is viewed by some analysts with skepticism.<sup>21</sup> Critics point out that well-being measures are too subjective and may not be comparable across pharmacists; job conditions that may be adequate to some may be unacceptable to others. They contend that job satisfaction indices are ordinal measures of intangible concepts, thus providing improper representations of what needs to be measured. A fundamental issue here is whether these indices are connected to meaningful and understandable behavior.

Differences in measurement techniques are problematic. Multiple indicators have been developed, and whether they measure the same outcome is questionable.<sup>127</sup> The use of Likert scales provides the basis for an illustration. In studies of job satisfaction among pharmacists, analysts frequently assume that a well-constructed set of Likert questions provides interval-level scores.<sup>128-130</sup> Responses to job satisfaction related statements may be recorded along a five-point scale that reads as follows: 2 for "strongly agree," 1 for "agree," 0 for "neither agree nor disagree," -1 for "disagree," and -2 for "strongly disagree." Once responses are gathered, mean satisfaction scores are calculated and interpreted. The problem is that Likert response categories depict an ordinal level of measurement; the categories represent an inherent order, but the numbers assigned to the categories do not necessarily reflect the magnitude of the differences among categories.

Some critics argue that it is incorrect to assume that the intensity of feeling between "strongly disagree" and "disagree" is equivalent to the intensity of feeling between other consecutive categories in the Likert scale. This is an important issue because appropriate inferential statistics differ for ordinal and cardinal variables; using the wrong statistical technique increases the chance of reaching the wrong conclusion about the significance of empirical results.<sup>131,132</sup>

An alternative approach is the rating scale model, which records a pharmacist's satisfaction level on the same coordinate with measures of item difficulty utilizing a logit scale.<sup>133</sup> A logit scale uses the log-odds of obtaining a particular rating to estimate the level of the latent trait and item difficulty; in contrast, traditional statistical analysis treats all items as having equal values and describes data in terms of averages, percentages, and probabilities.<sup>134</sup>

Likert-scale data may be used as a basis for obtaining interval-level estimates on a continuum by applying a third technique, the Rasch model, which is a form of item response theory.<sup>135</sup> Raw scores are converted into standardized units; then the units are aligned on a ruler that measures each component of the model. This method poses the advantage of allowing hypothesis tests that reflect varying levels of an attitude or trait. Under Rasch analysis, results from a survey may be compared meaningfully only if the survey works in the same manner for everyone who responds to the questionnaire. Some analysts claim that the use of Rasch analysis in the evaluation of pharmacists' job satisfaction is superior to other approaches<sup>136</sup>; Rasch estimates provide more accurate scores than the traditional estimates and are more precise when mean scores are more diverse.

Then there is discrepancy among researchers regarding whether job satisfaction should be measured by a single, global indicator or be derived, as a composite measure, from various indices of satisfaction with key aspects of a job. The first choice, called a facet-free item, focuses on an aggregate satisfaction scale without reference to specific aspects that presumably influence satisfaction; the second choice, known as a facet item, combines satisfaction from different sources related to the same job.<sup>137</sup> Using a single, global indicator is easier and avoids methodological problems concerning allocation of weights to various facets of a job, accounting for different frames of reference, and ensuring that all pertinent areas related to job satisfaction are identified<sup>138</sup>, but it tends to overestimate satisfaction and underestimate dissatisfaction.<sup>139</sup>

Recently little congruence was reported between an overall index of pharmacists' job satisfaction and several facet indices hypothesized to configure it<sup>140</sup>; variation in the overall index proceeded independently of variation in nearly all individual facets, which questioned the validity of deriving a composite measure of satisfaction from various indices pertaining to key facets of a job. The validity of deriving a composite measure was further challenged by the finding of significant differences between genders in the variation between several facets and overall job satisfaction.

## CONCLUSIONS

This article has sought to explore the concept of job satisfaction and its relevance to the pharmacist workforce, with frequent comparisons between the genders and among age groups in job-related perceptions and opinions. Understanding the nature and magnitude of the mechanisms that make pharmacists happier at work is important to employers and managers in their quest to respond to practitioners' needs, decrease workers' turnover, and increase productivity. Male and female pharmacists, as well as pharmacists from separate age groups, respond differently to work-related conditions and experiences, so the same set of rewards and incentives may not be universally effective. Additional research is needed

into the dynamics of the forces shaping pharmacists' perceptions and opinions in an effort to devise and implement specific policies that allocate human resources more efficiently within the various pharmacy settings.

## CONFLICT OF INTEREST

None.

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## References

1. Ahmad A, Khan MU, Elkalmi RM, Jamshed SQ, Nagappa AN, Patel I, Balkrishnan R. Job satisfaction among Indian pharmacists: An exploration of affecting variables and suggestions for improvement in pharmacist role. *Indian J Pharm Educ Res.* 2016;50(1):9-16. doi: [10.5530/ijper.50.1.2](https://doi.org/10.5530/ijper.50.1.2)
2. Al Khalidi D, Wazaify M. Assessment of pharmacists' job satisfaction and job related stress in Amman. *Int J Clin Pharm.* 2013;35(5):821-828. doi: [10.1007/s11096-013-9815-7](https://doi.org/10.1007/s11096-013-9815-7)
3. Belay YB. Job satisfaction among community pharmacy professionals in Mekelle city, Northern Ethiopia. *Adv Med Educ Pract.* 2016;7:527-531. doi: [10.2147/AMEP.S116147](https://doi.org/10.2147/AMEP.S116147)
4. Chua GN, Yee LJ, Sim BA, Tan KH, Sin NK, Hassali MA, Shafie AA, Ooi GS. Job satisfaction, organisation commitment and retention in the public workforce: A survey among pharmacists in Malaysia. *Int J Pharm Pract.* 2014;22(4):265-274.
5. Parvin MM, Kabir MN. Factors affecting employee job satisfaction of pharmaceutical sector. *Australian Journal of Business and Management Research.* 2011;1(9):113.
6. Calgan Z, Aslan D, Yegenoglu S. Community pharmacists' burnout levels and related factors: An example from Turkey. *Int J Clin Pharm.* 2011;33(1):92-100. doi: [10.1007/s11096-010-9461-2](https://doi.org/10.1007/s11096-010-9461-2)
7. Ferguson J, Ashcroft D, Hassell K. Qualitative insights into job satisfaction and dissatisfaction with management among community and hospital pharmacists. *Res Social Adm Pharm.* 2011;7(3):306-316. doi: [10.1016/j.sapharm.2010.06.001](https://doi.org/10.1016/j.sapharm.2010.06.001)
8. Rodrigues VF, Ribeiro MI, Pinto IC. Work satisfaction within community pharmacy professionals. *Adv Pharmacol Pharm.* 2014;2:6-12. doi: [10.13189/app.2014.020102](https://doi.org/10.13189/app.2014.020102)
9. Foroughi Moghadam MJ, Peiravian F, Naderi A, Rajabzadeh A, Rasekh HR. An analysis of job satisfaction among Iranian pharmacists through various job characteristics. *Iran J Pharm Res.* 2014;13(3):1087-1096.
10. Hawthorne N, Anderson C. The global pharmacy workforce: A systematic review of the literature. *Hum Resour Health.* 2009;7(1):48. doi: [10.1186/1478-4491-7-48](https://doi.org/10.1186/1478-4491-7-48)
11. Liu CS, White L. Key determinants of hospital pharmacy staff's job satisfaction. *Res Social Adm Pharm.* 2011;7(1):51-63. doi: [10.1016/j.sapharm.2010.02.003](https://doi.org/10.1016/j.sapharm.2010.02.003)
12. Seston E, Hassell K, Ferguson J, Hann M. Exploring the relationship between pharmacists' job satisfaction, intention to quit the profession, and actual quitting. *Res Social Adm Pharm.* 2009;5(2):121-132. doi: [10.1016/j.sapharm.2008.08.002](https://doi.org/10.1016/j.sapharm.2008.08.002)
13. Willis S, Elvey R, Hassell K. What is the evidence that workload is affecting hospital pharmacists' performance and patient safety? London: Centre for Workforce Intelligence; 2011.
14. Abbasi SM, Hollman KW. Turnover: The real bottom line. *Public Pers Manage.* 2000;29(3):333-342.
15. Lambert E, Hogan N. The importance of job satisfaction and organizational commitment in shaping turnover intent: A test of a causal model. *Crim Justice Rev.* 2009;34(1):96-118. doi: [10.1177/030016808324230](https://doi.org/10.1177/030016808324230)
16. Watrous KM, Huffman AH, Pritchard RD. When coworkers and managers quit: The effects of turnover and shared values on performance. *J Bus Psychol.* 2006;21(1):103-126. doi: [10.1007/s10869-005-9021-2](https://doi.org/10.1007/s10869-005-9021-2)
17. Hamermesh DS. The changing distribution of job satisfaction. *J Hum Resour.* 2001;36(1):1-30.
18. Bender KA, Heywood JS. Job satisfaction of the highly educated: The role of gender, academic tenure, and earnings. *Scot J Polit Econ.* 2006;53(2):253-279. doi: [10.1111/j.1467-9485.2006.00379.x](https://doi.org/10.1111/j.1467-9485.2006.00379.x)
19. Bilimoria D, Perry SR, Liang X, Stoller EP, Higgins P, Taylor C. How do female and male faculty members construct job satisfaction? The roles of perceived institutional leadership and mentoring and their mediating processes. *J Technol Transfer.* 2006;31(3):355-365. doi: [10.1007/s10961-006-7207-z](https://doi.org/10.1007/s10961-006-7207-z)
20. Kaiser LC. Gender-job satisfaction differences across Europe: An indicator for labour market modernization. *Int J Manpow.* 2007;28(1):75-94. doi: [10.1108/01437720710733483](https://doi.org/10.1108/01437720710733483)
21. Long A. Happily ever after? A study of job satisfaction in Australia. *Economic Record.* 2005;81(255):303-321. doi: [10.1111/j.1475-4932.2005.00271.x](https://doi.org/10.1111/j.1475-4932.2005.00271.x)
22. Clark AE. Job satisfaction and gender: Why are women so happy at work? *Labour Economics.* 1997;4(4):341-372. doi: [10.1016/S0927-5371\(97\)00010-9](https://doi.org/10.1016/S0927-5371(97)00010-9)
23. Donohue SM, Heywood JS. Job satisfaction and gender: An expanded specification from the NLSY. *Int J Manpow.* 2004;25(2):211-238. doi: [10.1108/01437720410536007](https://doi.org/10.1108/01437720410536007)

24. Sloane PJ, Williams H. Job satisfaction, comparison earnings, and gender. *Labour*. 2000;14(3):473-502. doi: [10.1111/1467-9914.00142](https://doi.org/10.1111/1467-9914.00142)
25. Bender KA, Donohue SM, Heywood JS. Job satisfaction and gender segregation. *Oxf Econ Pap*. 2005;57(3):479-496. doi: [10.1093/oepp/gpi015](https://doi.org/10.1093/oepp/gpi015)
26. Hagan J, Kay F. Even lawyers get the blues: Gender, depression, and job satisfaction in legal practice. *Law Soc Rev*. 2007;41(1):51-78. doi: [10.1111/j.1540-5893.2007.00291.x](https://doi.org/10.1111/j.1540-5893.2007.00291.x)
27. Majd M, Hashemian F, Sisi FY, Jalal M, Majd Z. Quality of life and job satisfaction of dispensing pharmacists practicing in Tehran private-sector pharmacies. *Iran J Pharm Res*. 2012;11(4):1039-1044.
28. Theodossiou I, Vasileiou E. Making the risk of job loss a way of life: Does it affect job satisfaction? *Res Econ*. 2007;61(2):71-83. doi: [10.1016/j.rie.2007.03.002](https://doi.org/10.1016/j.rie.2007.03.002)
29. Cimete G, Gencalp NS, Keskin G. Quality of life and job satisfaction of nurses. *J Nurs Care Qual*. 2003;18(2):151-158.
30. Schroder R. Job satisfaction of employees at a Christian university. *J Res Christ Educ*. 2008;17(2):225-246. doi: [10.1080/10656210802433467](https://doi.org/10.1080/10656210802433467)
31. Manan MM, Azmi Y, Lim Z, Neoh CF, Khan TM, Ming LC. Predictors of job satisfaction amongst pharmacists in Malaysian public hospitals and healthcare clinics. *J Pharm Pract Res*. 2015;45(4):404-411. doi: [10.1002/jppr.1094](https://doi.org/10.1002/jppr.1094)
32. Murphy SM, Friesner DL, Scott DM. Do in-kind benefits influence pharmacists' labor supply decisions? *Journal of Regional Analysis & Policy*. 2011;41(1):33.
33. Rothmann S, Malan M. Work-related well-being of South African hospital pharmacists. *SA J Ind Psychol*. 2011;37(1):1-11. doi: [4102/sajip.v37i1.895](https://doi.org/4102/sajip.v37i1.895)
34. Mahrous S, Maziarz D. Community pharmacist shortage: Fact or fiction? *Pharm Times*. 2008;74(2):58.
35. Galinsky E, Kim SS, Bond JT. Feeling overworked: When work becomes too much. Families and Work Institute; 2001. Available at: <https://familiesandwork.org/downloads/feelingoverworkedsumm.pdf> (accessed Oct 16, 2018).
36. Knapp KK, Cultice JM. New pharmacist supply projections: Lower separation rates and increased graduates boost supply estimates. *J Am Pharm Assoc* (2003). 2007;47(4):463-470.
37. Schommer JC, Pedersen CA, Doucette WR, Gaither CA, Mott DA. Community pharmacists' work activities in the United States during 2000. *J Am Pharm Assoc*. 2002;42(3):399-406.
38. Manasse HR, Speedie MK. Pharmacists, pharmaceuticals, and policy issues shaping the work force in pharmacy. *Am J Health Syst Pharm*. 2007;64(12):e30-e48.
39. Green F, Felstead A, Burchell B. Job insecurity and the difficulty of regaining employment: An empirical study of unemployment expectations. *Oxf Bull Econ Stat*. 2000;62(1):855-883. doi: [10.1111/1468-0084.0620s1855](https://doi.org/10.1111/1468-0084.0620s1855)
40. Weeks WB, Wallace AE. Race and gender differences in general internists' annual incomes. *J Gen Intern Med*. 2006;21(11):1167-1171. doi: [10.1111/j.1525-1497.2006.00592.x](https://doi.org/10.1111/j.1525-1497.2006.00592.x)
41. Reddin R, Chandra A. Applying economic model 'efficiency wage' concept for pharmacists: Can 'efficient' salaries reduce pharmacist turnover? *J Health Manag*. 2014;16(4):465-470. doi: [10.1177/0972063414548552](https://doi.org/10.1177/0972063414548552)
42. Acker GM. The effect of organizational conditions (role conflict, role ambiguity, opportunities for professional development, and social support) on job satisfaction and intention to leave among social workers in mental health care. *Community Ment Health J*. 2004;40(1):65-73.
43. Baggerly J, Osborn D. School counselors' career satisfaction and commitment: Correlates and predictors. *Professional School Counseling*. 2006;9(3):197-205. doi: [10.1177%2F2156759X0500900304](https://doi.org/10.1177%2F2156759X0500900304)
44. Lambert E, Paoline EA. The influence of individual, job, and organizational characteristics on correctional staff job stress, job satisfaction, and organizational commitment. *Crim Justice Rev*. 2008;33(4):541-564. doi: [10.1177%2F0734016808320694](https://doi.org/10.1177%2F0734016808320694)
45. Burchell B, Fagan C. Gender and the intensification of work: Evidence from the "European Working Conditions Surveys". *East Econ J*. 2004;30(4):627-642.
46. Day AL, Chamberlain TC. Committing to your work, spouse, and children: Implications for work-family conflict. *J Vocat Behav*. 2006;68(1):116-130. doi: [10.1016/j.jvb.2005.01.001](https://doi.org/10.1016/j.jvb.2005.01.001)
47. Hermansyah A, Sukorini AI, Setiawan CD, Priyandani Y. The conflicts between professional and non professional work of community pharmacists in Indonesia. *Pharm Pract (Granada)*. 2012;10(1):33-39.
48. Jacobs S, Hassell K, Ashcroft D, Johnson S, O'Connor E. Workplace stress in community pharmacies in England: Associations with individual, organizational and job characteristics. *J Health Serv Res Policy*. 2014;19(1):27-33. doi: [10.1177/1355819613500043](https://doi.org/10.1177/1355819613500043)
49. Lapane K, Hughes C. Job satisfaction and stress among pharmacists in the long-term care sector. *Consult Pharm*. 2006;21(4):287-292.
50. Mott DA, Doucette WR, Gaither CA, Pedersen CA, Schommer JC. Pharmacists' attitudes toward worklife: Results from a national survey of pharmacists. *J Am Pharm Assoc* (2003). 2004;44(3):326-336.
51. Ukens C. Pharmacists stressed but satisfied with jobs, study finds. *Drug Topics*. 2004;148(12):42-43.
52. Stack L. Employees behaving badly: How managers can recognize and combat employee 'desk rage'. *HR Magazine*. 2003;48(10):111-116.
53. Eslami A, Kouti L, Javadi M-R, Assarian M, Eslami K. An investigation of job stress and job burnout in Iranian clinical pharmacist. *J Pharm Care*. 2016;3(1-2):21-25.
54. Lewandowski CA. Organizational factors contributing to worker frustration: The precursor to burnout. *J Sociol Soc Welf*. 2003;30(4):175-185.
55. Kirk-Brown A, Wallace D. Predicting burnout and job satisfaction in workplace counselors: The influence of role stressors, job challenge, and organizational knowledge. *J Employ Couns*. 2004;41(1):29-37. doi: [10.1002/j.2161-1920.2004.tb00875.x](https://doi.org/10.1002/j.2161-1920.2004.tb00875.x)



56. Kumar S, Fischer J, Robinson E, Hatcher S, Bhagat R. Burnout and job satisfaction in New Zealand psychiatrists: A national study. *Int J Soc Psychiatry*. 2007;53(4):306-316. doi: [10.1177/0020764006074534](https://doi.org/10.1177/0020764006074534)
57. McMurray J, Linzer M, Konrad T, Douglas J, Shugerman R, Nelson K. The work lives of women physicians: Results from the physician work live study. *J Gen Intern Med*. 2000;200(15):372-380.
58. Cartwright L. Role montage: Life patterns of professional women. *J Am Med Womens Assoc* (1972). 1987;42(5):142-148.
59. Ubaka CM, Ochie UM, Adibe MO. Student pharmacists' career choices: A survey of three Nigerian schools of pharmacy. *Pharm Pract (Granada)*. 2013;11(3):149-155.
60. Carvajal MJ, Hardigan P. Pharmacists' inter-gender differences in behavior and opinions: Is work input an important mediator? *Internet Journal of Allied Health Sciences and Practice*. 2008;6(2):6.
61. Kee HJ. Glass ceiling or sticky floor? Exploring the Australian gender pay gap. *Economic Record*. 2006;82(259):408-427. doi: [10.1111/j.1475-4932.2006.00356.x](https://doi.org/10.1111/j.1475-4932.2006.00356.x)
62. Kim S. Gender differences in the job satisfaction of public employees: A study of Seoul Metropolitan Government, Korea. *Sex Roles*. 2005;52(9-10):667-681. doi: [10.1007/s11199-005-3734-6](https://doi.org/10.1007/s11199-005-3734-6)
63. Brockner J. Managing the effects of layoffs on survivors. *Calif Manage Rev*. 1992;34(2):9-28. doi: [10.2307/2F41166691](https://doi.org/10.2307/2F41166691)
64. Perry RW, Mankin LD. Organizational trust, trust in the chief executive and work satisfaction. *Public Pers Manage*. 2007;36(2):165-179.
65. Shah PP. Network destruction: The structural implications of downsizing. *Acad Manage J*. 2000;43(1):101-112. doi: [10.2307/1556389](https://doi.org/10.2307/1556389)
66. Bolin KA, Shulman JD. Nationwide survey of work environment perceptions and dentists' salaries in community health centers. *J Am Dent Assoc*. 2005;136(2):214-220. doi: [10.14219/jada.archive.2005.0146](https://doi.org/10.14219/jada.archive.2005.0146)
67. Cavaco AM, Krookas AA. Community pharmacies automation: Any impact on counselling duration and job satisfaction? *Int J Clin Pharm*. 2014;36(2):325-335. doi: [10.1007/s11096-013-9882-9](https://doi.org/10.1007/s11096-013-9882-9)
68. Kahaleh A, Gaither CA. Effects of empowerment on pharmacists' organizational behaviors. *J Am Pharm Assoc* (2003). 2005;45(6):700-708. doi: [10.1331/154434505774909553](https://doi.org/10.1331/154434505774909553)
69. Zurmehly J. The relationship of educational preparation, autonomy, and critical thinking to nursing job satisfaction. *J Contin Educ Nurs*. 2008;39(10):453-460.
70. Tansey TN, Mizelle N, Ferrin JM, Tschopp MK, Frain M. Work-related stress and the demand-control-support framework: Implications for the P x E fit model. *J Rehabil*. 2004;70(3):34-41.
71. Carvajal MJ, Hardigan PC. Pharmacists' sources of job satisfaction: Inter-gender differences in response. *Am J Pharm Educ*. 2000;64(4):420-425.
72. Seifert TA, Umbach PD. The effects of faculty demographic characteristics and disciplinary context on dimensions of job satisfaction. *Res High Educ*. 2008;49(4):357-381. doi: [10.1007/s11162-007-9084-1](https://doi.org/10.1007/s11162-007-9084-1)
73. Lin BY-J, Yeh Y-C, Lin W-H. The influence of job characteristics on job outcomes of pharmacists in hospital, clinic, and community pharmacies. *J Med Syst*. 2007;31(3):224-229.
74. Konrad AM, Ritchie JE, Lieb P, Corrigan E. Sex differences and similarities in job attribute preferences: A meta-analysis. *Psychol Bull*. 2000;126(4):593. doi: [10.1037/0033-2909.126.4.593](https://doi.org/10.1037/0033-2909.126.4.593)
75. Phua GSY, Teoh CJ, Khong LB, Baba B, Lim CW, Koh WL, Rhazi NAM, Ayob NC. The satisfaction and perception of intern pharmacists towards their training in government hospitals in the northern region of Malaysia. *Pharm Educ*. 2017;17:459.
76. Sørensen JB. Organizational diversity, labor markets, and wage inequality. *Am Behav Sci*. 2007;50(5):659-676. doi: [10.1177/0002764206295020](https://doi.org/10.1177/0002764206295020)
77. Carvajal MJ, Armayor GM. Inequalities in the distribution of pharmacists' wage-and-salary earnings: Indicators and their development. *Res Social Adm Pharm*. 2013;9(6):930-948. doi: [10.1016/j.sapharm.2013.01.004](https://doi.org/10.1016/j.sapharm.2013.01.004)
78. Carroll GR, Hannan MT. *The demography of corporations and industries*. Princeton, NJ: Princeton University Press; 2004.
79. Clay-Warner J, Reynolds J, Roman P. Organizational justice and job satisfaction: A test of three competing models. *Social Justice Research*. 2005;18(4):391-409. doi: [10.1007/s11211-005-8567-5](https://doi.org/10.1007/s11211-005-8567-5)
80. Colquitt JA, Conlon DE, Wesson MJ, Porter CO, Ng KY. Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *J Appl Psychol*. 2001;86(3):425. doi: [10.1037/0021-9010.86.3.425](https://doi.org/10.1037/0021-9010.86.3.425)
81. Cropanzano R, Rupp DE, Mohler CJ, Schminke M. Three roads to organizational justice. *Research in Personnel and Human Resources Management*. 2001;20:1-113. doi: [10.1016/S0742-7301\(01\)20001-2](https://doi.org/10.1016/S0742-7301(01)20001-2)
82. Masterson SS, Lewis K, Goldman BM, Taylor MS. Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. *Acad Manage J*. 2000;43(4):738-748. doi: [10.5465/1556364](https://doi.org/10.5465/1556364)
83. Irving PG, Coleman DF, Bobocel DR. The moderating effect of negative affectivity in the procedural justice-job satisfaction relation. *Can J Behav Sci*. 2005;37(1):20. doi: [10.1037/h0087242](https://doi.org/10.1037/h0087242)
84. Diekmann KA, Sondak H, Barsness ZI. Does fairness matter more to some than to others? The moderating role of workplace status on the relationship between procedural fairness perceptions and job satisfaction. *Social Justice Research*. 2007;20(2):161-180. doi: [10.1007/s11211-007-0036-x](https://doi.org/10.1007/s11211-007-0036-x)
85. Jepsen DM, O'Neill MS. Australian hospital pharmacists reflect on career success. *J Pharm Pract Res*. 2013;43(1):29-31.
86. Urbonas G, Kubilienė L, Kubilius R, Urbonienė A. Assessing the effects of pharmacists' perceived organizational support, organizational commitment and turnover intention on provision of medication information at community pharmacies in Lithuania: A structural equation modeling approach. *BMC Health Serv Res*. 2015;15(1):82. doi: [10.1186/s12913-015-0741-3](https://doi.org/10.1186/s12913-015-0741-3)

87. Bagheri S, Kousha A, Janati A, Asghari-Jafarabadi M. Factors influencing the job satisfaction of health system employees in Tabriz, Iran. *Health Promot Perspect*. 2012;2(2):190. doi: [10.5681/hpp.2012.022](https://doi.org/10.5681/hpp.2012.022)
88. Logan MS, Ganster DC. An experimental evaluation of a control intervention to alleviate job-related stress. *J Manag*. 2005;31(1):90-107. doi: [10.1177/0149206304271383](https://doi.org/10.1177/0149206304271383)
89. Harris JI, Winskowski AM, Engdahl BE. Types of workplace social support in the prediction of job satisfaction. *Career Dev Q*. 2007;56(2):150-156. doi: [10.1002/j.2161-0045.2007.tb00027.x](https://doi.org/10.1002/j.2161-0045.2007.tb00027.x)
90. Kahaleh A, Gaither C. The effects of work setting on pharmacists' empowerment and organizational behaviors. *Res Social Adm Pharm*. 2007;3(2):199-222. doi: [10.1016/j.sapharm.2006.08.001](https://doi.org/10.1016/j.sapharm.2006.08.001)
91. Kim S. Participative management and job satisfaction: Lessons for management leadership. *Public Adm Rev*. 2002;62(2):231-241. doi: [10.1111/0033-3352.00173](https://doi.org/10.1111/0033-3352.00173)
92. Rath T, Clifton DO. *How full is your bucket?* New York: Simon and Schuster; 2007. ISBN 978-1-59562-001-9.
93. Newstrom J, Gardner D, Pierce I. A neglected supervisory role: Building self-esteem at work. *Supervision*. 1999;68(3):9-12.
94. Valentine SR. Men and women supervisors' job responsibility, job satisfaction, and employee monitoring. *Sex Roles*. 2001;45(3-4):179-197. doi: [10.1023/A:1013549710711](https://doi.org/10.1023/A:1013549710711)
95. Miller GJ, Yeager SJ, Hildreth WB, Rabin J. How financial managers deal with ethical stress. *Public Adm Rev*. 2005;65(3):301-312. doi: [10.1111/j.1540-6210.2005.00455.x](https://doi.org/10.1111/j.1540-6210.2005.00455.x)
96. Allen TD, Finkelstein LM. Beyond mentoring: Alternative sources and functions of developmental support. *Career Dev Q*. 2003;51(4):346-355. doi: [10.1002/j.2161-0045.2003.tb00615.x](https://doi.org/10.1002/j.2161-0045.2003.tb00615.x)
97. Ferres N, Connell J, Travaglione A. Co-worker trust as a social catalyst for constructive employee attitudes. *J Manag Psychol*. 2004;19(6):608-622. doi: [10.1108/02683940410551516](https://doi.org/10.1108/02683940410551516)
98. Tan HH, Lim AK. Trust in coworkers and trust in organizations. *J Psychol*. 2009;143(1):45-66. doi: [10.3200/JRLP.143.1.45-66](https://doi.org/10.3200/JRLP.143.1.45-66)
99. Griskevicius V, Cialdini RB, Goldstein NJ. Applying (and resisting) peer influence. *MIT Sloan Manag Rev*. 2008;49(2):84.
100. Deckop JR, Cirka CC, Andersson LM. Doing unto others: The reciprocity of helping behavior in organizations. *J Bus Ethics*. 2003;47(2):101-113. doi: [10.1023/A:1026060419167](https://doi.org/10.1023/A:1026060419167)
101. Eder P, Eisenberger R. Perceived organizational support: Reducing the negative influence of coworker withdrawal behavior. *J Manag*. 2008;34(1):55-68. doi: [10.1177/0149206307309259](https://doi.org/10.1177/0149206307309259)
102. Gaither CA, Nadkarni A, Mott DA, Schommer JC, Doucette WR, Kreling DH, Pedersen CA. Should I stay or should I go? The influence of individual and organizational factors on pharmacists' future work plans. *J Am Pharm Assoc* (2003). 2007;47(2):165-173. doi: [10.1331/6J64-7101-5470-62GW](https://doi.org/10.1331/6J64-7101-5470-62GW)
103. Seston E, Hassell K. British pharmacists' work-life balance—Is it a problem? *Int J Pharm Pract*. 2014;22(2):135-145. doi: [10.1111/ijpp.12040](https://doi.org/10.1111/ijpp.12040)
104. Almer ED, Kaplan SE. The effects of flexible work arrangements on stressors, burnout, and behavioral job outcomes in public accounting. *Behavioral Research in Accounting*. 2002;14(1):1-34. doi: [10.2308/bria.2002.14.1.1](https://doi.org/10.2308/bria.2002.14.1.1)
105. Cline RR, Mott DA. Job matching in pharmacy labor markets: A study in four states. *Pharm Res*. 2000;17(12):1537-1345.
106. Mott DA. Use of labor economic theory to examine hours worked by male and female pharmacists. *Pharm Res*. 2001;18(2):224-233.
107. Armstrong-Stassen M. Encouraging retirees to return to the workforce. *Human Resource Planning*. 2006;29(4):38-44.
108. Gardner S, Stowe C. The impact of a gender shift on a profession: Women in pharmacy. *Forum on Public Policy*. 2006. Available at: <http://forumonpublicpolicy.com/archive07/gardner.pharmacy.pdf> (accessed Oct 16, 2018).
109. Nguyen BQ. Tomorrow's workforce: The needs for immigrant workers and strategies to retain them. *Public Pers Manage*. 2008;37(2):175-184.
110. Teeter DS. Part-time pharmacists: A growing phenomenon. *US Pharmacist*. 2004;29(6):77-83.
111. Gegax T. Relationship management: Create an enlightened work environment and reap the rewards from your employees. *Business Credit*. 2006;108(4):65-67.
112. Watkin C. How to improve organisational climate. *People Management*. 2001;7(13):52-53.
113. Neal A, West MA, Patterson MG. Do organizational climate and competitive strategy moderate the relationship between human resource management and productivity? *J Manag*. 2005;31(4):492-512. doi: [10.1177/0149206304272188](https://doi.org/10.1177/0149206304272188)
114. Amos EA, Weathington BL. An analysis of the relation between employee-organization value congruence and employee attitudes. *J Psychol*. 2008;142(6):615-631. doi: [10.3200/JRLP.142.6.615-632](https://doi.org/10.3200/JRLP.142.6.615-632)
115. Schroder R. Predictors of organizational commitment for faculty and administrators of a private Christian university. *J Res Christ Educ*. 2008;17(1):81-97. doi: [10.1080/10656210801968299](https://doi.org/10.1080/10656210801968299)
116. Miller BK, Rutherford MA, Kolodinsky RW. Perceptions of organizational politics: A meta-analysis of outcomes. *J Bus Psychol*. 2008;22(3):209-222. doi: [10.1007/s10869-008-9061-5](https://doi.org/10.1007/s10869-008-9061-5)
117. Ferris GR, Adams G, Kolodinsky RW, Hochwarter WA, Ammeter AP. Perceptions of organizational politics: Theory and research directions. In: Yammarino FJ, Dansereau F. *The many faces of multi-level issues*. Bingley: Emerald Group; 2002. p. 179-254. ISBN: 978-0-76230-805-7.
118. Peterson DK. Deviant workplace behavior and the organization's ethical climate. *J Bus Psychol*. 2002;17(1):47-61. doi: [10.1023/A:1016296116093](https://doi.org/10.1023/A:1016296116093)
119. Deshpande SP, George E, Joseph J. Ethical climates and managerial success in Russian organizations. *J Bus Ethics*. 2000;23(2):211-217. doi: [10.1023/A:1005943017693](https://doi.org/10.1023/A:1005943017693)

120. Fritzsche DJ. Ethical climates and the ethical dimension of decision making. *J Bus Ethics*. 2000;24(2):125-140. doi: [10.1023/A:1006262914562](https://doi.org/10.1023/A:1006262914562)
121. Kulas JT, McInerney JE, DeMuth RF, Jadwinski V. Employee satisfaction and theft: Testing climate perceptions as a mediator. *J Psychol*. 2007;141(4):389-402. doi: [10.3200/JRPL.141.4.389-402](https://doi.org/10.3200/JRPL.141.4.389-402)
122. Buerhaus PI, Donelan K, Ulrich BT, Norman L, Dittus R. State of the registered nurse workforce in the United States. *Nurs Econ*. 2006;24(1):6-12.
123. Rhoades L, Eisenberger R. Perceived organizational support: A review of the literature. *J Appl Psychol*. 2002;87(4):698. doi: [10.1037/0021-9010.87.4.698](https://doi.org/10.1037/0021-9010.87.4.698)
124. Chen Z, Eisenberger R, Johnson KM, Sucharski IL, Aselage J. Perceived organizational support and extra-role performance: Which leads to which? *J Soc Psychol*. 2009;149(1):119-124. doi: [10.3200/SOCP.149.1.119-124](https://doi.org/10.3200/SOCP.149.1.119-124)
125. Harris R, Harris K, Harvey P. A test of competing models of the relationships among perceptions of organizational politics, perceived organizational support, and individual outcomes. *J Soc Psychol*. 2007;147(6):631-655. doi: [10.3200/SOCP.147.6.631-656](https://doi.org/10.3200/SOCP.147.6.631-656)
126. Brusentsev V. Evaluation of female labor force participation in the United States 1967 to 2003. *International Advances in Economic Research*. 2006;12(3):358-373.
127. Jiang N. Measurement of job satisfaction reconsidered: A structural equation modeling perspective. Paper presented at the annual meeting of the American Sociological Association. San Francisco, CA. Available at: [http://citation.allacademic.com/meta/p\\_mla\\_apa\\_research\\_citation/1/1/0/3/5/p110354\\_index.html](http://citation.allacademic.com/meta/p_mla_apa_research_citation/1/1/0/3/5/p110354_index.html) (accessed Oct 16, 2018).
128. Maio V, Goldfarb NI, Hartmann CW. Pharmacists' job satisfaction: Variation by practice setting. *P & T*. 2004;29(3):184-190.
129. Olson DS, Lawson KA. Relationship between hospital pharmacists' job satisfaction and involvement in clinical activities. *Am J Health Syst Pharm*. 1996;53(3):281-284.
130. Riggins JL, Plowman BH. Pharmacist employment and satisfaction trends at ELI Lilly and Company. *Drug Inf J*. 2000;34(4):1223-1229.
131. Pell G. Use and misuse of Likert scales. *Med Educ*. 2005;39(9):970. doi: [10.1111/j.1365-2929.2005.02237.x](https://doi.org/10.1111/j.1365-2929.2005.02237.x)
132. Jamieson S. Likert scales: How to (ab)use them. *Med Educ*. 2004;38(12):1217-1218. doi: [10.1111/j.1365-2929.2004.02012.x](https://doi.org/10.1111/j.1365-2929.2004.02012.x)
133. Bond T, Fox C. *Applying the Rasch model: Fundamental measurement in the human sciences*. Mahwah, NJ: Lawrence Erlbaum; 2001.
134. Linacre JM. Optimizing rating scale category effectiveness. *J Appl Meas*. 2002;3(1):85-106.
135. Alagumalai S, Curtis DD, Hungi N. *Applied Rasch measurement: A book of exemplars*. Dordrecht: Springer; 2005.
136. Hardigan PC, Carvajal MJ. Application of Rasch rating scale model to analysis of job satisfaction among practicing pharmacists. *J Am Pharm Assoc* (2003). 2008;48(4):522-529. doi: [10.1331/JAPhA.2008.07042](https://doi.org/10.1331/JAPhA.2008.07042)
137. Awalom MT, Tesfa AF, Kidane ME, Ghebremedhin MR, Teklesenbet AH. Eritrean pharmacists' job satisfaction and their attitude to re-professionalize pharmacy in to pharmaceutical care. *Int J Clin Pharm*. 2015;37(2):335-341. doi: [10.1007/s11096-015-0064-9](https://doi.org/10.1007/s11096-015-0064-9)
138. Lambert E, Hogan NL, Barton SM. The impact of job satisfaction on turnover intent: A test of a structural measurement model using a national sample of workers. *Soc Sci J*. 2001;38(2):233-250. doi: [10.1016/S0362-3319\(01\)00110-0](https://doi.org/10.1016/S0362-3319(01)00110-0)
139. Oshagbemi T. Overall job satisfaction: How good are single versus multiple-item measures? *J Appl Psychol*. 1997;82(2):247-252. doi: [10.1037/0021-9010.82.2.247](https://doi.org/10.1037/0021-9010.82.2.247)
140. Carvajal MJ, Popovici I, Hardigan PC. Gender differences in the measurement of pharmacists' job satisfaction. *Hum Resour Health*. 2018;16(1):33. doi: [10.1186/s12960-018-0297-5](https://doi.org/10.1186/s12960-018-0297-5)