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Jules Carrière, Ph.D
Christopher Bourque (Student)
Silvia Bonaccio, Ph.D.
School of Management
University of Ottawa

THE ROLE OF COMMUNICATION SATISFACTION AS A MEDIATOR BETWEEN AN ORGANIZATION'S INTERNAL COMMUNICATION SYSTEMS AND TWO JOB OUTCOMES: JOB SATISFACTION AND ORGANIZATIONAL COMMITMENT

This study examines the relationship between communication practices, communication satisfaction and two important job outcomes: job satisfaction and affective organization commitment. The study takes place in a large urban land ambulance service. Ninety-one paramedics participated. Our findings suggest that communication satisfaction fully mediates the relationship between internal communication practices and the two work outcomes studied.

INTRODUCTION

Communication is central to the practice of management. Managers spend 75% or more of their work time engaged in some form of communication. (Mintzberg, 1973, p. 38; Klemmer & Snyder, 1972). There is good reason for this. Evidence suggests that, to some extent, more is better when it comes to internal communication. Research by Yammarino and Naughton (1988) demonstrates a positive relationship between the amount of time spent communicating and important work outcomes such as the level of effort expended by employees and employee job satisfaction. As a result of these and similar findings, many organizations have invested significant financial and human resources toward developing effective and efficient internal communication systems to facilitate the communication of relevant and timely information to employees at all levels of the organization.

The purpose of this study is to provide further insight into the relationship between internal communication practices, communication satisfaction, job satisfaction, and organizational commitment. Specifically, we intend to test the hypothesis that communication satisfaction acts as a mediator between an organization's internal communication systems and two important job outcomes: job satisfaction and affective organizational commitment. Our study is focused in the emergency services sector in general, and on land ambulance services in particular.

Managers of land ambulance service operations face several complex challenges in their efforts to foster communication satisfaction and efficiency amongst front-line staff. First, as an emergency service provider, land ambulance service operations must maintain '24 / 7 / 365' response capabilities. This demands that paramedics work non-standard work hours. However middle and top managers generally maintain traditional office hours. This scheduling dichotomy gives rise to the possibility of a communication gap or 'disconnect' between managers and their front-line staff. Second, land ambulance service operations operate with a high degree of spatial differentiation, "which refers to the degree to which the location of an organization's offices, plants and personnel is dispersed geographically" (Robins & Barnwell, 1998, p.79). This minimizes the opportunity for meaningful face-to-face interactions between paramedics and managers at all levels of the organization. Third, the mobile nature of land

ambulance service operations makes it difficult for managers to communicate with paramedic staff who are in transit between fixed posts. Finally, in many land ambulance service operations, high emergency call volumes keep paramedic crews busy for much of their shift making it difficult, if not impossible, for managers to communicate with employees who are busy tending to the sick and injured. All of these factors synergistically combine to minimize the extent to which paramedics can actively engage in meaningful internal organization communication. This could lead to a sense of isolation amongst paramedics from the rest of the organization (Cascio, 2000).

THEORY AND HYPOTHESES

Research interest in the domain of internal communication dates back to the beginning of the twentieth century. Over the last hundred years, a large body of literature has emerged. Despite a century of enquiry, interest on the subject matter remains strong. This seems largely due to the increasing complexity of modern organizations, the dynamic and diverse environments in which they operate, and rapid advances in, and important experiences with, the information technologies they use to communicate and interact with employees (Bélanger & Watson-Manheim, 2006; Byrne & Lemay, 2006; Turner et al., 2006). While many relationships within the domain of internal communication have been examined, some of the more interesting involve those between employee perceptions of internal communication and work attitudes. This is because work attitudes are known to be related with significant and meaningful work outcomes at both the individual and organizational level. One of the most studied relationships between communication satisfaction and work attitudes is that involving job satisfaction. A more recent and less understood relationship is that between communication satisfaction and organizational commitment. Job satisfaction and organizational commitment are perhaps the two most common attitudinal variables discussed in the academic literature. This is because an employee's evaluation of his or her job and his or her commitment to the organization have been related with important job outcomes, including employee withdrawal (Cohen, 1993), organizational citizenship behaviours (Ilies et al., 2006; Cohen, 1999), counterproductive work behaviours (Spector et al., 2006), and job performance (Carmeli & Freund, 2004).

Communication Practices and Communication Satisfaction

An organization's internal communication practices consist of the full spectrum of communication activities, both formal and informal, undertaken by its members for the purpose of disseminating information to one or more audiences within the organization. This general but comprehensive definition is necessary to accurately reflect the true nature and breadth of such practices. Internal communication practices may be undertaken for the purpose of downward, horizontal, or upward communication and may be initiated by anyone within the organization. However, it remains the responsibility of management to ensure that an effective and efficient internal communication system is in place so as to ensure that all employees are provided with timely, important, and relevant information.

Communication satisfaction, "the satisfaction with various aspects of communication in an organization" (Crino & White, 1981), is related to, but not synonymous with, communication practices. The relationship is one of antecedent (communication practices) and consequent (communication satisfaction). Communication satisfaction is an employee's affective appraisal of the organization's communication practices and is a multidimensional construct. Though the exact number of dimensions that comprise communication satisfaction is not known, eight are routinely identified: (1) communication climate, (2) communication with supervisors, (3) organizational integration, (4) media quality, (5) horizontal and informal communication, (6) organizational perspective, (7) personal feedback, and (8) communication with subordinates. This is likely due to the prevalence of use of the Communication Satisfaction Questionnaire (CSQ) (Downs & Hazen, 1977). It has been suggested that the CSQ is

“arguably the best measure of communication satisfaction in the organizational arena.” (Clampitt & Downs, 1993). As with most multidimensional constructs, certain dimensions of communication satisfaction are more important than others in fostering overall satisfaction. Communication audits consistently show that communication climate, communication with supervisors, and personal feedback are the dimensions most strongly correlated with overall communication satisfaction (Downs & Adrian, 2004, p. 155; Downs & Hazen, 1977).

The link between internal communication practices and employee communication satisfaction is well established. Communication audits reveal that greater communication efforts tend to result in higher levels of communication satisfaction (Hargie et al., 2002). While some researchers have suggested that an organization’s members will desire “more information from other organization members regardless of the amount of information they currently receive” (Zimmerman et al., 1996), others have shown that improved internal communication decreases the gap between the amount of information that employees desire and the amount of information they receive (Hargie et al., 2002). Nevertheless, both findings highlight the importance of internal communication to employees. This creates an important dilemma for managers: what information, and how much of it, should be disseminated to organization members? While it is obvious that timely, relevant information is essential for high levels of job performance, there is a point at which information overload occurs and well-documented negative consequences ensue (Eppler & Mengis, 2004).

Adopting and supporting effective internal communication practices is important for all organizations. This is particularly true for organizations operating with high spatial differentiation. Research in telecommuting and virtual teams identifies effective communication as a critical element for the success of such work arrangements due to their high degree of spatial differentiation (Horwitz et al., 2006; Kowalski & Swanson, 2005). Land ambulance services are one example of organizations operating with high spatial differentiation. This is necessary to fulfill their mission to provide timely and effective care to the critically ill and injured. Because the location of the ‘next victim’ cannot be predicted, paramedic crews must be deployed throughout a service’s geographic coverage area. Thus, paramedics are often based in single-crew stations and/or remain mobile for much of their shift. The net effect is prolonged isolation from co-workers and managers. This could lead to an erosion of trust (Cascio, 2000), which is an essential element of effective communication.

Hypothesis 1: Paramedics’ appraisal of their organization’s internal communication practices will be significantly and positively related with communication satisfaction.

Communication Satisfaction and Job Satisfaction

Job satisfaction is defined as “a person’s evaluation of his or her job and work context” (McShane, 2004, p. 115) and as a “global feeling about the job or as a related constellation of attitudes about various aspects or facets of the job” (Spector, 1997, p. 2). As with communication satisfaction, there is no consensus on the number of dimensions which comprise the construct, though these commonly range from five to twenty depending on the psychometric measure used. Commonly assessed dimensions of job satisfaction include satisfaction with pay, promotion, supervision, benefits, contingent rewards, operating conditions, coworkers, nature of work, and communication (Spector, 1997, p.3, 8-19).

Research shows that job satisfaction is positively related to organizational citizenship behaviours (Gonzalez & Garazo, 2006; Ilies et al., 2006; Ackfeldt & Coote, 2005; Becker & Billings, 1993) and prosocial behaviour (McNeely & Meglino, 1994). Additionally, while results have been inconsistent, there is evidence to suggest that job satisfaction may be positively related with employee performance (Karatepe & Tekinkus, 2006; Sy et al., 2006; Carmeli & Freund, 2004; Carr et al., 2003; Judge et al., 2001), and organizational performance (Schneider et al., 2003). Research also shows job satisfaction to be

negatively related with burnout (Burke et al, 2006; Tsigilis et al., 2004; Lee & Ashforth, 1993), intention to leave the organization (Hwang & Kuo, 2006; Parker & Kohlmeyer III, 2005; Tuten & Neidermeyer, 2004; Boshoff & Mels, 2000; Cohen, 2000; Becker & Billings, 1993; Cohen, 1993; Blau & Boal, 1989), intention to leave the job (Cohen, 1993), intention to leave the occupation (Cohen, 1993), tardiness (Iverson & Deery, 2001; Koslowsky et al., 1997; Blau, 1986), early departure (Iverson & Deery, 2001), absenteeism (Hardy et al., 2003; Iverson & Deery, 2001; Scott & Taylor, 1985), and counterproductive work behaviours other than those previously identified (Spector et al., 2006; Penney & Spector, 2005).

Meaningful investigation into the relationship between communication satisfaction and job satisfaction was first undertaken by Herzberg in the 1960s (Downs & Hazen, 1977). However, a significant body of research did not begin to emerge until the mid- to-late 1970s (Pincus, 1986). Initially, much of the research focused on job satisfaction as it related to communication with an employee's supervisor. Further research undertaken by Foehrenbach and Ruch in the 1980s demonstrated an important link between an employee's satisfaction with organizational communication and the communication efforts of top management (Pincus, 1986). A review of the literature on the communication-job satisfaction relationship reveals a significant positive correlation between these two constructs (Pincus, 1986; Munchinsky, 1977). Employees reporting higher levels of communication satisfaction tend to be more satisfied with their employment situation. Apart from supervisory communication, further findings indicate that satisfaction with other factors such as personal feedback and communication climate also are strongly related to job satisfaction (Downs & Adrian, 2004, p. 155).

Hypothesis 2a: Paramedics' appraisal of their organization's internal communication systems will be significantly and positively related to job satisfaction.

Hypothesis 2b: Communication satisfaction will mediate the relationship between paramedics' perception of their organization's internal communication systems and their level of job satisfaction (figure 1).

Figure 1



Communication Satisfaction and Affective Organizational Commitment

Organizational commitment is a “psychological stabilizing or obliging force that binds individuals to courses of action relevant” to the organization (Bentein et al., 2005). Initially conceptualized as a unidimensional construct, organizational commitment is now known to be multidimensional in nature. The most common forms of organizational commitment studied and reported on in the academic literature are affective commitment, continuance commitment, and normative commitment. However, since affective commitment is more likely to reflect primary feelings and attitudes toward the job and its components, it dominates the organizational commitment literature. Affective organizational commitment specifically refers to “the employee’s emotional attachment to, identification with, and involvement in the organization” (Meyer & Allen, 1991).

Existing research reveals that organizational commitment is positively related to job satisfaction (Cohen, 1993; Mathieu and Zajac, 1990; Bateman and Strasser, 1984; Mowday et al., 1979), organizational citizenship behaviours (Cohen, 1999; Gregersen, 1993), motivation (Mathieu & Zajac, 1990), attendance (Mathieu & Zajac, 1990), job performance (Siders et al., 2001; Mowday et al., 1979), and life satisfaction (Cohen, 1999). Furthermore, it is negatively related to tardiness (Blau, 1986),

absenteeism (Cohen 2000; Cohen, 1999), intent to leave the organization (Boshoff & Mels, 2000; Cohen, 2000; Cohen, 1999; Cohen, 1993; Jaros et al., 1993; Mathieu & Zajac, 1990; Blau & Boal, 1989), and turnover (Bentein et al., 2005; Griffeth et al., 2000; Blau & Boal, 1989; Mowday et al., 1979).

Despite the importance attributed to both internal communication and organization commitment, little is known about the relationship between these two constructs. Only two studies discussing this relationship have been published (Ng et al., 2006; Varona, 1996). In both cases, a positive relationship between communication satisfaction and organizational commitment was identified.

Hypothesis 3a: Paramedics' appraisal of their organization's internal communication systems will be significantly and positively related to affective organizational commitment.

Hypothesis 3b: Communication satisfaction will mediate the relationship between paramedics' perception of their organization's internal communication systems and their level of affective organizational commitment (figure 2).

Figure 2



METHOD

Sample

The focus organization for this study was a large Canadian municipal land ambulance service. During the survey period, the organization employed 468 staff and had an operating budget of approximately \$50 million. Paramedics represented approximately 54% of the workforce. The organization was the sole land ambulance service provider in its geographic area and responded to over 90,000 emergency and non-emergency calls in 2004, the last year for which such data were available. Only paramedics were eligible for inclusion in the study. Participation was voluntary. Questionnaires were distributed to each of the organization's 280 active paramedics via the company's internal mail system. Ninety-one (32.5%) questionnaires were returned. The respondents' mean age was 32.8 years (SD = 8.3 years). The majority of the respondents were male (74.7%) and married or cohabitating (75.8%). All respondents had completed one or more post-secondary programs. The mean organizational tenure was 3.5 years (SD = 1.9 years).

Measures

The study questionnaire, developed by the researchers, was comprised of pre-existing work-related psychometric measures. Only quantitative data were collected.

Internal Communication Practices. Goldhaber & Rogers' (1979; see also Downs & Adrian, 2004) Communication Audit Survey (CAS), was used to assess employee perceptions of the organization's internal communication practices. In its traditional form, the CAS consists of 122 items divided into eight subscales: (1) information received from others, (2) information sent to others, (3) follow-up on information sent to others, (4) key sources of information, (5) timeliness of information received from key sources, (6) organizational communication relationships, (7) organizational outcomes, and (8) channels of information (Downs & Adrian, 2004 p. 124; Goldhaber, 1979). Several changes to the CAS were made.

First, two of the subscales were eliminated from the study questionnaire: organizational communication relationships and organizational outcomes. These subscales were excluded in favour of alternative psychometric measures. Second, 'pager' and 'e-mail' were added to the channels of information subscale due to their prevalent use within the focus organization. All of the subscales except timeliness of information received from key sources require respondents to provide two responses, one indicating the respondent's perception of the current state of communication practices and another indicating the respondent's desired state of communication practices. The timeliness of information received from key sources only requires respondents to rate the timeliness of information currently received. In the former case, difference scores can be calculated between the current state of communication and the desired state of communication. Responses for all subscales were measured using a 5-point Likert scale. The verbal anchors used for the four subscales allowing for difference scores ranged from: 1 = 'very little' to 5 = 'very great'. The verbal anchors for the timeliness of information subscale ranged from 1 = 'very untimely' to 5 = 'very timely'. None of the questions were reverse-scored.

Satisfaction with Internal Communication. The Communication Satisfaction Questionnaire (CSQ), developed by Downs and Hazen (1977), was used to assess employee satisfaction with internal communication. Traditionally, this measure consists of 40 items covering eight dimensions: (1) communication climate, (2) communication with supervisors, (3) organizational integration, (4) media quality, (5) horizontal and informal communication, (6) organizational perspective, (7) personal feedback, and (8) communication with subordinates. The communication with subordinates subscale was eliminated from the study questionnaire because paramedics are not supervisory personnel and thus do not have subordinates. Responses were measured using a 7-point Likert scale with the following verbal anchors: 1 = 'very dissatisfied', 2 = 'moderately dissatisfied', 3 = 'slightly dissatisfied', 4 = 'indifferent', 5 = 'slightly satisfied', 6 = 'moderately satisfied', and 7 = 'very satisfied'. None of the questions were reverse-scored.

Job Satisfaction. The Minnesota Satisfaction Questionnaire (MSQ), developed by Weiss, Dawis, England, and Lofquist (1967), was used to assess employee job satisfaction. This measure exists in both a long (100 item) and short (20 item) form. Because of concerns related to the length of the questionnaire, the researchers felt that the short form was more appropriate for this study. Both versions of the form cover two dimensions of job satisfaction: (1) intrinsic job satisfaction and (2) extrinsic job satisfaction. No changes to the original design of the MSQ short form for this study. Responses were measured using a 7-point Likert scale with the following verbal anchors: 1 = 'very dissatisfied', 2 = 'moderately dissatisfied', 3 = 'slightly dissatisfied', 4 = 'indifferent', 5 = 'slightly satisfied', 6 = 'moderately satisfied', and 7 = 'very satisfied'. None of the questions were reverse-scored.

Affective Organizational Commitment. The Affective Organizational Commitment Scale (AOCS), developed by Meyer and Allen (1991), was used to assess employee affective organizational commitment. No changes were made to the original design of the measure for this study. Responses were measured using a 7-point Likert scale with the following verbal anchors: strongly disagree, moderately disagree, slightly disagree, indifferent, slightly agree, moderately agree, and strongly agree. Four of the eight questions were reverse-scored.

Control Measures. Respondents were asked to provide information relating to eight demographic variables: (1) age, (2) sex, (3) highest level of education completed, (4) marital status, (5) number of children, (6) organizational tenure, (7) shift duration, and (8) shift pattern.

RESULTS

The purpose of this study is to establish whether communication satisfaction acts as a mediator between internal communication practices and two important work-related outcomes: job satisfaction and affective organizational commitment. While numerous approaches and related methodologies exist for testing mediation, we chose to adopt a “causal steps approach” (Mackinnon et al., 2002). This approach, first introduced by Judd and Kenny (1981) and later refined by Baron and Kenny (1986), remains “the most commonly used approach in the psychological literature” (Mackinnon et al., 2002). Testing for mediation is a three-step process. In step 1, bivariate analysis is performed to establish the relationships between study variables. To support a hypothesis of mediation, the correlation between the independent and the dependent variables, and the mediator and the dependent variables, must be significant. If this is the case, then the second step can be considered. In step 2, a series of regression analyses are performed: first, the mediator is regressed on the independent variable; second, the dependent variable is regressed on the independent variable; and third, the dependent variable is regressed on both the independent variable and the mediator (Baron & Kenny, 1986; Judd & Kenny, 1981). Further support for a mediation hypothesis exists only if the independent variable affects the mediator in the first equation; the independent variable affects the dependent variable in the second equation; and the mediator affects the dependent variable in the third equation. (Baron & Kenny, 1986). Finally, in step 3, the effect of the independent variable and the mediator on the dependent variable is reviewed. If mediation is present, the effect of the independent variable on the dependent variable will be less in the third regression analysis than in the second (Baron & Kenny, 1986). Full mediation is present if “the independent variable has no effect when the mediator is controlled for” (Baron & Kenny, 1986).

Step 1: Correlation between Predictor, Mediator and Outcome

Bivariate correlations. Correlations and descriptive statistics are presented in Table 1. Several control variables showed significant correlations with the variables in the proposed model. First, organizational tenure had a moderate negative correlation with paramedics’ perception of communication practices ($r = -.31, p < .05$), communication satisfaction ($r = -.34, p < .01$), job satisfaction ($r = -.32, p < .01$), and affective organizational commitment ($r = -.33, p < .01$). This implies that perceptions of communication practices, communication satisfaction, job satisfaction and affective organizational commitment deteriorate as length of service with the organization increases. Second, shift pattern had a moderate positive correlation with communication satisfaction ($r = .26, p < .05$), job satisfaction ($r = .30, p < .01$), and affective organizational commitment ($r = .23, p < .05$). This suggests that employees working 12-hour shifts had higher levels of communication satisfaction, job satisfaction and affective organizational commitment compared to their colleagues working 8-hour shifts. Third, age had a minor negative correlation with job satisfaction ($r = -.22, p < .05$) suggesting that younger employees were slightly more satisfied with their job than older employees.

Of greater importance is the correlation between the predictor variable (communication practices) and the outcome variables (job satisfaction and affective organizational commitment) and that between the mediator variable (communication satisfaction) and the outcome variables. As noted in Table 1, internal communication practices are significantly and positively correlated with job satisfaction ($r = .48, p < .01$) and affective organizational commitment ($r = .42, p < .01$). Furthermore, there is a strong correlation between the mediator and outcomes in our proposed model. As can be seen, communication satisfaction has a strong positive correlation with both job satisfaction ($r = .72, p < .01$) and affective organizational commitment ($r = .60, p < .01$). Hence, the initial requirements for mediation are met.

Table 1
Mean, Standard Deviation, Correlations, and Scale Reliability

Variable	Mean	SD	Age	Sex	Education	Marital Status	Children	Org. Tenure	Shift Duration	Shift Pattern	CAS	CSQ	MSQ	AOCS
Age	32.84	8.30												
Sex	1.25	0.44	-.27 **											
Education	3.18	0.38	.10	-.07										
Marital Status	1.76	0.43	.22 *	-.14	.13									
Children	0.80	1.09	.60 **	-.22 *	.17	.30 **								
Org. Tenure	3.47	1.89	.49 **	-.06	-.12	.30 **	.34 **							
Shift Duration	11.73	1.00	-.15	-.05	.12	.06	-.01	-.12						
Shift Pattern	1.80	0.40	-.29 **	.16	.23 *	.04	-.04	-.02	.54 **					
CAS	-0.79	0.69	.02	-.03	-.17	-.23	.10	-.31 *	-.11	-.07	(.94)			
CSQ	3.37	1.02	-.14	.01	.13	-.19	.02	-.34 **	.16	.26 *	.70 **	(.95)		
MSQ	4.74	0.97	-.22 *	.08	.07	-.12	-.06	-.32 **	.17	.30 **	.48 **	.72 **	(.89)	
AOCS	3.49	1.30	-.16	-.01	.03	-.09	-.18	-.33 **	.10	.23 *	.42 **	.60 **	.73 **	(.84)

Acronyms

- CAS: Communication practices as measured by the Communication Audit Survey (ICA)
 CSQ: Communication satisfaction as measured by the Communication Satisfaction Questionnaire (Downs & Hazen)
 MSQ: Job satisfaction as measured by the Minnesota Satisfaction Questionnaire (Weiss et al.)
 AOCS: Affective organizational commitment as measured by the Affective Organizational Commitment Scale (Meyer & Allen)

Scoring Template for Control Variables

- Sex: 1 = male 2 = female
 Education: 1 = grade school 2 = high school 3 = community college 4 = university
 Marital status: 1 = single 2 = married or cohabitating
 Children: Number
 Org. tenure: Number of years
 Shift duration: Hours
 Shift pattern: 1 = fixed 2 = rotating (shift work)

Numbers in parentheses represent Cronbach's alpha scores

- * Correlation is significant at the 0.05 level
 ** Correlation is significant at the 0.01 level

n = 50 to 91 due to missing data

Steps 2 and 3: Regression Analysis and Interpretation of Results

Hypothesis 1. A stepwise linear regression analysis was performed to test the hypothesis that paramedics' appraisal of their organization's internal communication practices will be significantly and positively related with communication satisfaction. The results of this analysis are presented in Table 2. The data show that 56.3% of the total variance in communication satisfaction is explained by the model, 49.8% of which is attributable to the organizations' internal communication practices. The remaining 6.5% of explained variation is attributable to the shift pattern control variable. These findings support Hypothesis 1.

Table 2
Regression Analysis of Communication Satisfaction on Communication Practices

	R²	ΔR²	b	t	p
Model Summary	.563				
Block 1 of 1 (Stepwise)					
Age			-.06	-.57	.573
Sex			.00	.04	.966
Education			.08	.75	.459
Marital status			-.06	-.56	.578
Number of children			.01	.05	.964
Organizational tenure			-.05	-.45	.655
Shift duration			-.09	-.77	.445
Shift pattern		.065	.26	2.59	.013
Communication practices		.498	.72	7.31	.000

n = 50 due to missing data

Hypothesis 2a. Stepwise linear regression analysis was performed to test the hypothesis that paramedics' appraisal of their organization's internal communication systems is significantly and positively related to job satisfaction. The results of this analysis are presented in Table 3. The data show that 46.0% of the total variance in job satisfaction is explained by the model, 23.4% of which is directly attributable to the organizations' internal communication practices. The remaining 22.6% of explained variation is fully attributable to the shift pattern control variable. These findings support Hypothesis 2a.

Table 3
Regression Analysis of Job Satisfaction on Communication Practices

	R²	ΔR²	b	t	p
Model Summary	.460				
Block 1 of 1 (Stepwise)					
Age			-.12	-1.12	.268
Sex			.07	.68	.500
Education			.04	.38	.704
Marital status			-.09	-.81	.423
Number of children			.02	.14	.888
Organizational tenure			-.16	-1.42	.163
Shift duration			.05	.39	.695
Shift pattern		.226	.48	4.57	.000
Communication practices		.234	.53	5.04	.000

n = 55 due to missing data

Hypothesis 2b. Stepwise linear regression analysis was performed to test the hypothesis that communication satisfaction mediates the effect of paramedics' perceptions of their organization's internal communication practices on their job satisfaction. The results of this analysis are presented in Table 4. The data show that 60.2% of the total variation in job satisfaction is explained by the model, 50.9% of which is directly attributable to the organization's internal communication practices. The remaining 9.3% of explained variation is fully attributable to the shift pattern control variable.

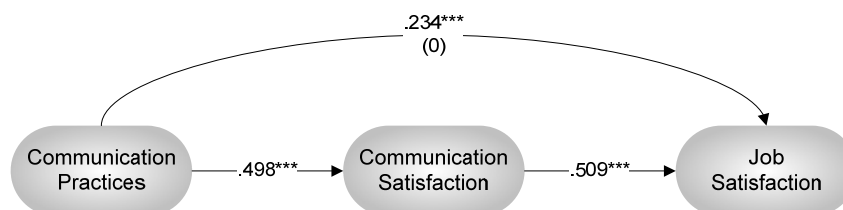
Table 4
Regression Analysis of Job Satisfaction on Communication Practices
and Communication Satisfaction

	R²	ΔR²	b	t	p
Model Summary	.602				
Block 1 of 1 (Stepwise)					
Age			-.06	-.64	.528
Sex			.03	.29	.776
Education			.01	.08	.938
Marital status			-.04	-.41	.681
Number of children			-.01	-.10	.918
Organizational tenure			-.09	-.89	.376
Shift duration			.10	.94	.352
Shift pattern		.093	.31	3.22	.002
Communication practices			.15	1.04	.304
Communication satisfaction		.509	.65	6.62	.000

n = 72 due to missing data

The data in Table 4 reveal that internal communication practices are not a significant predictor of job satisfaction when communication satisfaction is included in the model used to test Hypothesis 2a. This suggests that communication satisfaction fully mediates the effects of communication practices on job satisfaction (Baron & Kenny, 1986), as represented in Figure 3. Thus, hypothesis 2b is supported.

Figure 3



*** p < .001

Numbers in parentheses indicate the mediated effect

Hypothesis 3a. Stepwise linear regression analysis was performed to test the hypothesis that paramedics' appraisal of their organization's internal communication systems is significantly and positively related to affective organizational commitment. The results of this analysis are presented in Table 5. The data show that 24.9% of the total variation in communication satisfaction is explained by the model, 17.5% of which is attributable to communication satisfaction. The remaining 7.4% of explained variation is attributable to the shift pattern control variable. These results support hypothesis 3a.

Table 5
Regression Analysis of Affective Organizational Commitment on Communication Practices

	R²	ΔR²	b	t	p
Model Summary	.249				
Block 1 of 1 (Stepwise)					
Age			-.08	-.67	.506
Sex			.16	1.27	.209
Education			-.04	-.36	.724
Marital status			-.03	-.22	.824
Number of children			-.15	-1.19	.238
Organizational tenure			-.14	-1.11	.271
Shift duration			-.11	-.77	.443
Shift pattern		.074	.27	2.26	.028
Communication practices		.175	.44	3.66	.001

n = 57 due to missing data

Hypothesis 3b. Stepwise linear regression analysis was performed to test the hypothesis that communication satisfaction mediates the effect of paramedics' appraisal of their organization's internal communication practices on affective organizational commitment. The results of this analysis are presented in Table 6. The data show that 34.2% of the total variation in job satisfaction is explained by the model, all of which is directly attributable to communication satisfaction. This finding supports Hypothesis 3b.

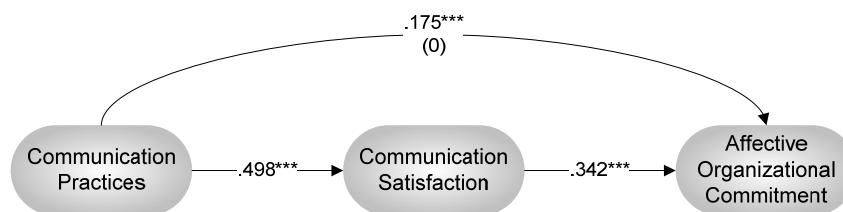
Table 6
Regression Analysis of Affective Organizational Commitment on Communication Practices and Communication Satisfaction

	R²	ΔR²	b	t	p
Model Summary	.342				
Block 1 of 1 (Stepwise)					
Age			-.12	-.95	.348
Sex			.18	1.51	.139
Education			-.11	-.93	.360
Marital status			-.03	-.22	.830
Number of children			-.20	-1.67	.101
Organizational tenure			-.14	-1.16	.252
Shift duration			.02	.19	.853
Shift pattern			.16	1.28	.208
Communication practices			-.04	-.21	.835
Communication satisfaction		.342	.59	4.84	.000

n = 75 due to missing data

The data in Table 6 reveal that internal communication practices are not a significant predictor of affective organizational commitment when communication satisfaction is included in the model used to test Hypothesis 3a. This finding suggests that communication satisfaction fully mediates the effects of communication practices on job satisfaction (Baron & Kenny, 1986) as represented in Figure 4. Thus hypothesis 3b is supported.

Figure 4



*** $p < .001$

Numbers in parentheses indicate the mediated effect

DISCUSSION

The purpose of this study was to determine if communication satisfaction mediates the effects of internal communication practices on two important job outcomes: job satisfaction and affective organizational commitment. Consistent with existing research, we identified significant and positive relationships between internal communication practices and communication satisfaction (Hargie et al., 2002), communication satisfaction and job satisfaction (Pincus, 1986; Munchinsky, 1977), and communication satisfaction and affective organizational commitment (Ng et al., 2006; Varona, 1996). Our most important finding is that internal communication practices affect job satisfaction and affective organizational commitment only if they foster communication satisfaction amongst employees. This suggests that communication satisfaction fully mediates the effects of internal communication practices on the two job outcomes evaluated in this study: job satisfaction and affective organizational commitment. We believe this is the first time that such a link has been reported in the academic literature. This finding is significant for several reasons. First, it has a fundamental practical implication for managers: internal communication systems that fail to generate communication satisfaction amongst employees will not foster job satisfaction or affective organizational commitment regardless of the quantity of the information that is transmitted. Thus, managers must provide employees with timely and highly valued information. This demands that managers develop a clear understanding of which communication practices are most valued by employees, as well as the quantity and quality of information these individuals require to perform their jobs well. Only then can managers design and implement an effective and efficient internal communication system capable of meeting employees' communication needs and wants. Second, the finding that communication satisfaction mediates the effects of communication practices on multiple job outcomes suggests the possibility that communication satisfaction may be a fundamental 'yardstick' against which employees appraise all of an organization's operating activities and change initiatives. This contemplation is further supported with evidence from the change management literature which shows that employee attitudes and the outcomes of organizational change initiatives depend, at least in part, on effective internal communication practices (Proctor & Doukakis, 2003; Kitchen & Daly, 2002).

There are four limitations to this study that we wish to address. First, the methodology employed to test for mediation required that we make important assumptions about the direction of the relationships between the variables under study. While the data support this hypothesis, more research will be needed to confirm a causal relationship. Second, our study was centered in a public sector organization operating within the healthcare industry. Additional research is necessary to determine if the relationships identified generalize to other types of organizations operating in other industries. Third, the study population represented a fairly homogeneous group of individuals in terms of both cultural and ethnic diversity.

Additional research is needed to determine if the findings herein can be generalized across cultural and racial boundaries. Finally, the sample size for this study was relatively small ($n = 91$); future, large-scale research will be instrumental in determining whether these findings can be replicated.

To conclude, this research has solely examined the relationship of communication satisfaction to job satisfaction, on the one hand, and organizational commitment, on the other. Following Pettit, Goris & Vaught (1997), who called for further research in the field, future research should aim to theoretically and empirically explore the relationships between communication satisfaction and other key organizational outcomes such as job involvement and turnover intent.

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