The Impact of the Broadcasting Mistake Management Culture in a Healthy Organization on the Quality of the Personnel Work Life

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ABSTRACT

Background: Today, healthy organizations such as hospital have found out the importance of quality of work life (QWL) of their personnel. QWL direct to increase job satisfaction, improve the quality of services to patient of hospital, and create high performance. One of factors that impact QWL is mistake management culture (MMC) when contribute different organization aspects such as QWL and cover its needs and finally promote job performance.

Material and Method: A questionnarie was designed with items involve five-item Likert-type scale items and it distribute samong a sample of 207 nurses of four hospitals that voluntarily par-

ticipated in research plan in Mashhad city. Two hospitals were private and two hospitals were public.

Result: There are significant relationships between MMC, QWL and performance.

Conclusion: According to importance of enhancement of QWL and job performance in organizations such as hospital, broadcasting culture of mistake management plays positive role and promotes quality level of work life of employees. Therefore, we can improve job satisfaction by changing and manipulating QWL factors, and thus move toward the development of the organization.

INTRODUCTION

It is of multiple importances for many new enterprises, which regard themselves as learning organizations, to make use of the potential of their personnel, in order to be competitive within global bazaars. Dealing with mistakes is a special strategic source of the workplace learning for such organizations, because the current work often is so complex, that mistakes cannot be avoided [1].

There is a certain component of risk in everything we do. Its relevance is based on the testimony that mistakes are inevitable in complex organizations [1]. Errors can result in negative consequences (e.g., loss of time, faulty products) as well as in positive ones (e.g., learning, innovation).The scientific understanding of the negative effects of errors is much better developed than that of the potential positive effects of errors. Most of the research has supported the concept of error prevention-the effort to block erroneous actions whenever possible. The potential long-term positive consequences of errors, such as learning, innovation, and resilience, however, are less obvious, although people readily agree that they can learn from errors.

In the long run, organizations that have an effective approach to errors may be more interested, because they learn from errors, are more apt to experiment, and are more likely to innovate. Unfortunately, much of the evidence for using a positive organizational attitude to errors is still anecdotal and it needs to be empirically validated [2].

Given their inevitability, mistakes nevertheless offer the potential for learning through practice, experiences that could be used by organizations and by personnel to improve their practices.

Therefore, mistakes should not be seen as incidents which are to be ignored or even hidden, but rather as opportunities for productive learning. Such an orientation is paid to have a positive impact on the learning and the performance of and within organizations [1].

Mistake management programs are valuable for all organizations, in order to avoid and decrease the material and spiritual costs of the mistakes and to enrich the organization learning. A benefit that is much greater than financial savings, lies in the fact that the mistake management programs show our contacts, that we stand behind our organizational mission and values, that we stand behind our quality standards, and that we have integrity and genuine concern for our contacts. In terms of the community relations, it is priceless [3].

One of the issues whose quality level that establishing a mistake management can improve and promote, is the QWL. However, no empirical evidence exists on the nature of or the relationships among MMC and the QWL, especially in health care organizations such as hospitals. We decided to investigate the roles of MMC on the QWL and the job performance in the private and public hospitals of Mashhad city.

BACKGROUND AND RESEARCH HYPOTHESIZES

[Table/Fig-1] depicts a conceptual model which explained the role of MMC in the QWL and subsequently in the job performance.

Quality of Work life (QWL)

The QWL is defined as "employee satisfaction with respect to a variety of needs through resources, activities, and outcomes,

which stem from the participation in the workplace" [4]. Studies have demonstrated that employees with a high QWL tend to report high levels of identification with their organizations, job satisfaction dna job performance and lower levels of turnover and personal alienation e.g. [5]. One conceptualization of the QWL, based on the need-hierarchy theory of Maslow, regards the QWL as the employee satisfaction of seven sets of human developmental needs: (1) health and safety needs, (2) economic and family needs, (3) social needs, (4) esteem needs, (5) actualization needs, (6) knowledge needs, and (7) aesthetic needs [6].

The QWL was conceptualized in terms of the need satisfaction which stemmed from an interaction of the workers' needs (survival, social, ego, and the self-actualization needs) and those organizational resources which were relevant for meeting them. Robbins (1989) defined the QWL as "a process by which an organization responds to the employee needs by developing mechanisms to allow them to share fully in making the decisions that design their lives at work. According to the philosophy of the QWL which holds people as the most important resource in the organization, the personnel are trustworthy, responsible and capable of making a valuable contribution and they should be treated with dignity and respect.

The QWL has been well recognized as a multi-dimensional con-struct and it may not be universal or eternal. Beauregard [7] said that the key concepts which are captured and discussed in the existing literature include job security, better reward systems, a higher pay, an opportunity for growth, participative groups, and an increased organizational productivity. In the scientific management tradition, the satisfaction with the QWL was thought to be based solely on "extrinsic" traits of the job: salaries and other tangible benefits, and the safety and hygiene of the workplace. In contrast, the human relations approach stresses that, while the extrinsic rewards are important, the "intrinsic rewards" are the key predictors of the productivity, efficiency, absenteeism and the turnover. These intrinsic rewards include traits which are specific for the work which is done, the "task content": the skill levels, the autonomy and the challenge.

According to Robbins, the QWL is "a process by which an organ-ization responds to the employee needs by developing mechanisms to allow them to share fully in making the decisions that design their lives at work". The key elements of the QWL in the literature include job security, job satisfaction, a better reward system, employee benefits, employee involvement and organizational performance [8]. In this study, the QWL was defined as the favourable condition and environment which were provided for the interested employees, and providing for the employees' welfare.

There is a plethora of literature which has highlighted the factors which are critical for the assessment of the QWL [9]. Attempts also have been made to empirically define the QWL [10,11,12]. The comprehensive delineation of the QWL concept is found in three major works: Levine [10] and Walton [12]. Other researchers have attempted to measure the QWL in a variety of settings by using combinations of various questionnaires such as job satisfaction, organizational commitment, alienation, job stress, organizational identification and the job involvement and finally, the work role, the ambiguity, conflict, and the overload were studied as the proxy measures of the QWL.

It seems that there is no commonly accepted definition for the quality of work life.

Heskett [13] proposed that the QWL, which was measured by the feelings that employees have towards their jobs, colleagues, and companies, would enhance a chain effect, leading to the organization's growth and profitability. According to Havlovic [8], and Straw [14], the key concepts which are captured in the QWL, include job security, better reward systems, a higher pay, an opportunity for growth, and participative groups among others. Walton [12] proposed the conceptual categories of the QWL. He suggested eight aspects in which the employees' perceptions towards their work organizations could determine their QWL: an adequate and fair compensation; a safe and healthy environment; development of human capacities; growth and security; social integrative constitutionalism; the total life space and social relevance.

In UK, Gilgeous [15] assessed how the manufacturing managers perceived their QWL in five different industries. Despite the growing complexity of the working life, Walton's [12] eight-part typology of the dimensions of the QWL remains a useful analytical tool. By using samples from Standard and Poors 500 companies, Lau [16] found that the QWL companies had a higher growth rate, as was measured by the five-years trends of the sales growth and asset growth. However, the outcome for the profitability yielded mixed results on Walton's [12] conceptualization of the QWL. Saklani [17] stressed that with the ever-changing technology and the increased access to information, the study of organizations with respect to their productivity, efficiency and quality of services, was very crucial, in order to improve the performance of the work in India.

The need to improve the organizational productivity in the health care industry spurred Brooks et al., [18] to develop the construct of quality of nursing work life. They came out with four dimensions of the conceptual framework namely; work life/home life dimension, work design dimension, work context dimension and work world dimension. In another study which was done by Wyatt and Chay [19], they found four dimensions of the QWL among the predom-inantly Chinese-Singapore sample of the employees. In Malaysia, Hanefah [20], designed, developed and tested the QWL measure for professionals, namely public and government accountants and architects. They conceptualized the QWL as a multi-dimensional construct which comprised of seven dimensions, namely growth and development, participation, physical environment, supervision, pay and benefits, social relevance and workplace integration. In summary, several studies that had examined the QWL dimensions varied significantly, not only across countries but also among researchers. This study was an attempt to further develop the dimensions of the QWL in Iran.

Therefore, according to what was discussed above, the first hypothesis was proposed as follows:

H_1: The QWL has a positive impact on the performance.

The Mistake Management Culture (MMC)

For organizational learning from errors, it is necessary to use active approaches to errors, rather than more passive approaches [21]. It is important to note that errors are not only threatening, but that they offer opportunities as well [22]. A learning organization requires a positive attitude towards exploration and errors and it should deal with errors actively. Errors are an important issue in the work psychology for different reasons. Firstly, it is the raw material that produces stress, accidents, inefficient human-machine interaction,

quality and performance problems, and a bad climate. Thus, many recurrent problems in the industry are related to the issue of errors. Secondly, the attitudes towards errors and how one deals with them are the indications of a company's organizational culture. Bureaucratic companies usually attempt to prevent errors at all costs, while entrepreneurial cultures have a more positive attitude towards errors and what one may learn from them.

Thirdly, if a company tries to alter its culture or if one wants to introduce the issue of error in the selection procedures, one needs a measure of error orientation [21]. Therefore, in light of the fact that human errors are inevitable, it seems important and helpful for organizations to rely not only on error prevention, but they should also encourage individuals and organizations to discuss and share their error experiences, and in turn, learn from the errors, which is considered essential for the organizations' success [2]. In fact, the ability of people to learn from errors has been well established by researches on error management training [23, 24, 25].With regards to learning from errors, the error management uses errors as learning opportunities and it encourages exploration and experimentation. The error management, thus, overcomes the inherent conflict in allocating resources between the control and the learning perspectives [2]. The mistake management climate refers to the employees' perceptions of the "organizational practices which are related to communicating about errors, to sharing the error knowledge, to helping in error situations, and to fast detecting and handling errors" [23, 2]. The major goals of the error management are, to deal effectively with errors and their consequences after the occurrence of an error and to prevent future errors. This can be achieved by (1) promptly detecting, extensively analyzing, and openly communicating about the errors, (2) effectively dealing with and reducing the negative error consequences, and (3) learning from errors, which are viewed as valuable learning opportunities [23].

The mistake orientation, as proposed by previous research and as shown in [Table/Fig-1], is a multidimensional construct which consists of: (a) Error competence, (b) an estimation whether one can learn from mistakes, (c) mistake risk taking, (d) stress from mistakes, (e) mistake anticipation, (f) a tendency of covering up mistakes, (g) a readiness to communicate about mistakes, and (h) thinking about mistakes [1]. [Table/Fig-1] shows the factors of the mistake management and its definition.

| Factor Name	Definition
Error Competence	Knowledge/capability to deal with errors immediately.
Learning from Errors	Learning from errors so that work plans are optimized in the long-term.
Error Risk-Taking	General openness to errors; acceptance of errors as necessary to achieve goals.
Error Anticipation	Stable, negative attitude about errors based in pessimism and negative affectivity.
Error Strain	Being strained by errors and being fearful of them; reacting to errors with "high emotion"
Covering Up Errors	Strategy for handling errors used by anxious persons; reaction to organizational culture that is not error tolerant.
Error Communication	A propensity to talk about errors, both to warn co-workers and to ask for advice on how to solve them.
Thinking about Errors	Tendency to analyze/deconstruct error events; desire to understand errors and their causes.

[Table/Fig-1]: Factors of MMC (Rybowiak [21])

According to the definitions of every construct and mistake management literature, it is assumed that error competence, learning from errors, error risk-taking, error anticipation, error communication, and thinking about errors are related to MMC positively, but that error strain and covering up errors have a negative relationship with MMC Rybowiak [21].

As the most important mission of MMC is communicating with respect to mistakes, sharing the knowledge of obtained experiences and non covering up of the mistakes are a resource and an opportunity for learning in an organization. It seems that MMC can provide a section of personnel needs for knowledge. Moreover, since a part of survival needs is safety needs, MMC can have a positive relationship with the survival needs too. Due to this, a second hypothesis was proposed, which was as follows:

H_2: MMC has a positive impact on the QWL.

Communicating with respect to mistakes in an organization creates a situation that the personnel can manage, they can pass faults and obstacles for accomplishing their functions successfully and they can have a productive performance. Thus, our final hypothesis formed its base on the relationship between MMC and the performance, as van Dyck [2] predicted it:

H_3: MMC has a positive impact on the performance.
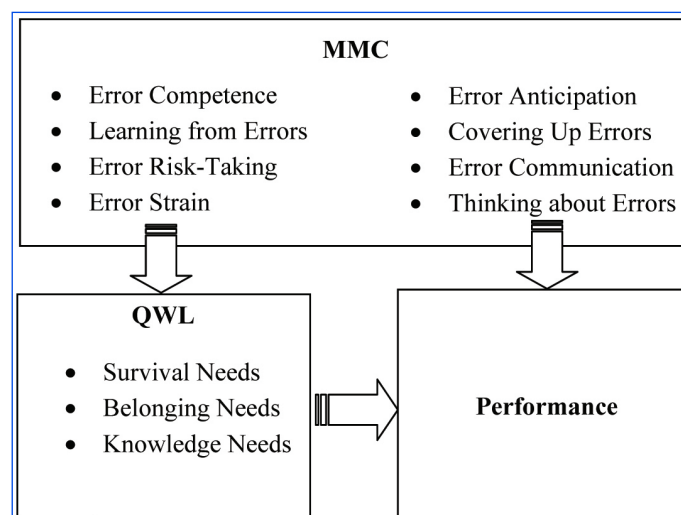
[Table/Fig-2]: Relationships between MMC on QWL & Performance (Research conceptual model).

METHODOLOGY

This was a descriptive survey which defined the impact of MMC on promoting the QWL in safety critical organizations such as hospitals. For assessing this impact, the questions of Nguyen's [26] questionarie for the QWL measure and the questions of the Rybowiak [21] questionnarie for the MMC measure were adopted and a questionarie was designed with items which involved the five-item, Likert-type scale items. The results in [Table/Fig-2] demonstrate that the measures which were used in the current study all exceeded the commonly accepted standard of the coefficient alpha -0.7. Note that this will only support our arguments on the reliability of the measure. In totality, according to the early sampling, the reliability of the questionnaire was. 84, which was a good reliability.

To test the construct validity of each scale, we conducted a Confirmatory Factor Analysis (CFA) and analyzed the covariance matrix by using the maximum likelihood procedure of SPSS,

Amos 20. The fit statistics of the model; χ^2 = 660.295, df = 377 and P_{Value} =.000; goodness- of-fit index [GFI] =0.894; comparative fit index [CFI] = 0.902; the Root Mean Square error of approximation (RMSEA) = .060; all corresponded reasonably well with those which were found in the literature.

The research major hypothesis was tested and the relationships between the constructs were modelled by using structural equation analyses (which are hereafter referred to as SEM) with the maximum likelihood estimation method, by using SPSS, Amos 20. The covariance matrices were analyzed in all the cases by using Amos. In this model, Performance1, Performance2, Performance3 and the Performance four items for the performance scale, Survival Needs, Belonging Needs, Knowledge Needs, Error Competence, Learning from Errors, Error Risk-Taking, Error Strain, Error Anticipation, Covering Up Errors, Error Communication, and Thinking about Errors were treated as exogenous variables and Performance, QWL and MMC are treated as endogenous variables. [Table/Fig-3] shows the summary statistics and the covariance matrix of the model exogenous variables.

The Statistical Population, the Sample Size and the Sampling Method

The data was collected from the nurses of four hospitals which voluntarily participated in the research plan in Mashhad city. Two hospitals were private and two hospitals were public. The sample size that was calculated by the G power Software, consisted of 207 nurses who were selected by using a random sampling method, from the four centres. The data collection was pursued until 207 complete questionnaires were obtained. The ratio of the two parts (i.e. private and public) was considered as equal.

RESULTS

Descriptive Statistics

53.6% of the responders were females and 46.1% were males. The mean age of the respondents was 34 years and the mean of the tenure were 9.85 years. The education of the respondents was diploma -20.3% and 68.6% -under, high diploma and BSc-11.1% higher. Their monthly incomes were 320$ and under (25.2%), between 320 and 640 Dollars (57.5%), and higher salaries (16.9%).

The Structural Equation Model

The general conclusion was that the theorized model was a good fit for the data. As the fit indices—χ^2= 79.077, df= 45(P_{Value}= .001), CFI=.951, GFI=.943, NFI=.897, AGFI=.901, RMR=.049, and RMSEA=.061 —we conclude that the fit was acceptable [Table/Fig-4] shows the standardized theoretical path coefficient of SEM.

According to the relationships of the variables in the final fitted model, all the dimensions of MMC, except three of them, had significant standardized regression weights at a 99% confidence interval [P_{Value}<.000]. But the coefficient of error risk-taking [P_{Value}=.122, C.R.[1] = 1.545] and the covering up errors [P_{Value}=.056, C.R. = -1.913] were not significant, which was significant at a 5% level. In our research setting, although error anticipation had a significant role in the regression equation[P_{Value}=.001, C.R. = -3.257], its existence leaves model from acceptable fitness boundary. Thus, the coefficient of this variable was ignored in our inductive analysis.

[Table/Fig-5] shows the unstandardized estimates of the structural paths, the results of the examined hypotheses and the standardized effects between the constructs in the model.

According to the calculated SEM, the results revealed that the first hypothesis (H$_1$) that predicted the positive impact of the QWL on performance, was supported (β = .374, p = .000). Therefore, when an organization such as a hospital is enjoying a high level of the QWL, we can expect to see a high performance. The estimated structural path between MMC and the QWL was significant (β =.222, p =.021) and thus, the hypothesis 2 (H$_2$) was supported. Finally, MMC also contributed to the performance (β =.693, p =.000). Thus, the third hypothesis (H$_3$) were supported too. In all the examinations, the error and confidence intervals were respectively 5% and 95%.

The results also indicated that MMC, with .776 and .222 total effects, played an essential role in predicting the job performance and the QWL of the hospital nurses.

	α	Mean	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Per1	***	3.946	.788														
Per2	***	3.893	.436	.678													
Per3	***	3.753	.278	.328	.886												
Per4	***	3.826	.238	.312	.525	.756											
Competence	.800	3.851	.215	.255	.211	.260	.495										
Learning	.879	4.100	.202	.230	.136	.112	.273	.564									
Risk	.843	3.411	.007	.052	.228	.272	.110	.106	1.157								
H. Strain	.808	3.180	-.054	-.135	-.089	-.106	-.157	-.075	-.243	.870							
I. Anticipation	.755	2.725	-.121	-.072	.044	.079	-.100	-.094	.333	.157	.698						
J. Covering	.706	2.626	-.045	.046	.084	.067	.000	-.032	.166	.045	.278	.734					
K. Communication	.804	4.060	.054	.066	-.039	.021	.213	.191	-.039	-.026	-.150	-.209	.644				
L. Thinking	.895	4.211	.172	.193	.140	.147	.289	.264	.066	-.089	-.108	-.063	.328	540			.
M. Survival Needs	.723	2.712	.108	.104	.037	.058	-.008	.046	.275	-.102	.176	.169	-.038	-.059	.918		
N. Belonging Needs	.720	2.903	.208	.173	.195	.140	.088	.105	.127	-.096	.032	.070	.019	.029	.340	.593	
O. Knowledge Needs	.819	3.108	.171	.134	.271	.253	.163	.129	.340	-.171	.176	.124	-.012	.044	.389	.324	1.043

[Table/Fig-3]: Scale means, reliability, and inter-scale correlations
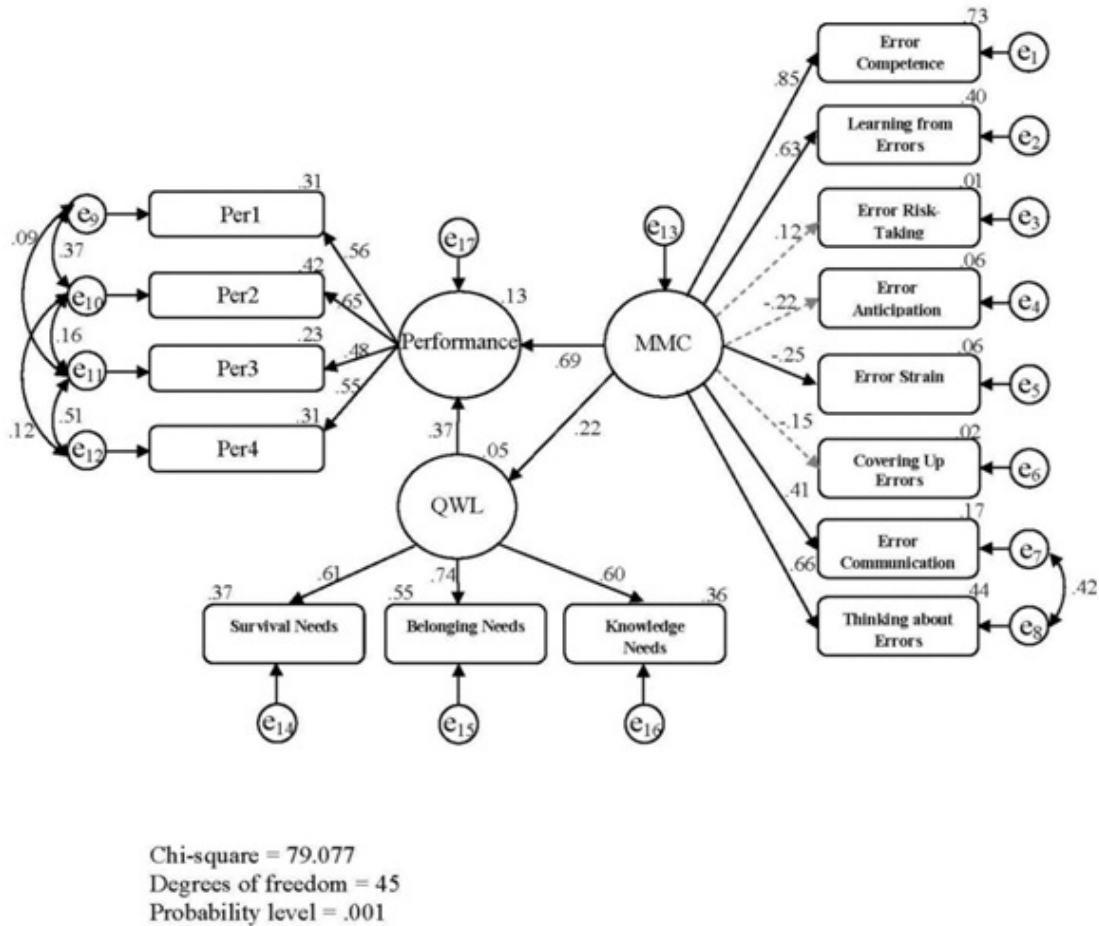
[Table/Fig-4]: Results of structure equation modeling

Hypothesis	Structural Path	T-Statistic	P-Value	Direct Effect	Indirect Effect	Total Effects
H$_1$	QWL➔Performance	3.335	.000	.374	.000	.374
H$_2$	MMC➔QWL	2.314	.021	.222	.000	.222
H$_3$	MMC➔Performance	5.520	.000	.693	.083	.776

[Table/Fig-5]: Unstandardized Structural Paths in the Model and Standardized Direct, Indirect and Total Effects between Constructs

DISCUSSION AND CONCLUSION

Studies have shown that an organization can only achieve its goals from an economic perspective, provided that these goals were shared between the employees who were at the heart of the organization, that they were motivated, and that the needed resources were provided for them to do their work effectively. There is a consensus that all of the following job attributes must be addressed to motivate the employees and to enable them to achieve the organizations' goals: autonomy, feedback, support, feeling that their work contributed to the organizations' goals, having the resources which were needed to do their task, and knowing the limits and the extent of their work –which is the QWL [27].

According to the importance of the enhancement of the QWL and the job performance in organizations such as hospitals, the broadcasting culture of mistake management plays a positive role and it promotes the quality level of the work life of the employees. Thus, in this research, we paid to test this assumption, until help managers to invest on MMC of their organization and improve QWL and subsequently job performance of their personnel. As Mirkamali [28] discussed, identifying the factors which are related to the faculty the QWL is of great importance, because it has a positive and a significant correlation with the job satisfaction. Therefore, we can improve the job satisfaction by changing and manipulating the

QWL factors, and can thus move towards the development of the organization.

Communicating with respect to the errors, sharing the error knowledge and helping in error situations, as well as a quick error detection and analysis, an effective error recovery, and coordinated error handling efforts—the facets of the mistake management culture [27], are all the directly supported needs of the employees for performing their functions quickly and precisely in an organization. These supports provide the knowledge needs and the safety needs of their survival requirements and in totality, they cause improvement in their QWL and its subsequent nerve personnel to have better performance for their organization. These argumentations were acknowledged by our hypotheses, as the results of their examinations had demonstrated that MMC directly and indirectly, through the QWL path, had a positive correlation with the personnel job performance and that it enhanced the QWL.

As was explored, the importance of MMC in an organization and its critical roles in the QWL and the job performance, showed that it was not empty of interests that it be expressed points for developing mistake management programs. Based on the mistake management research in aviation, Helmreich [29] provided several guidelines for organizations to develop an effective mistake management program, in addition to error prevention, such as: (1)

building a trusting relationship between the management and the employees, which encourages and rewards individuals and teams for sharing the safety-related information, (2) forming a management which adopts a non-punitive policy toward errors, and (3) training work crews in error avoidance and management [23].

NOTE

*Critical ratio for regression weight.

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FINANCIAL OR OTHER COMPETING INTERESTS:
None.