On The Front Line
The Work of First Responders in a Post 9/11 World

A Study of Work Conditions & Emotional Health among NYC Firefighters and Fire Officers

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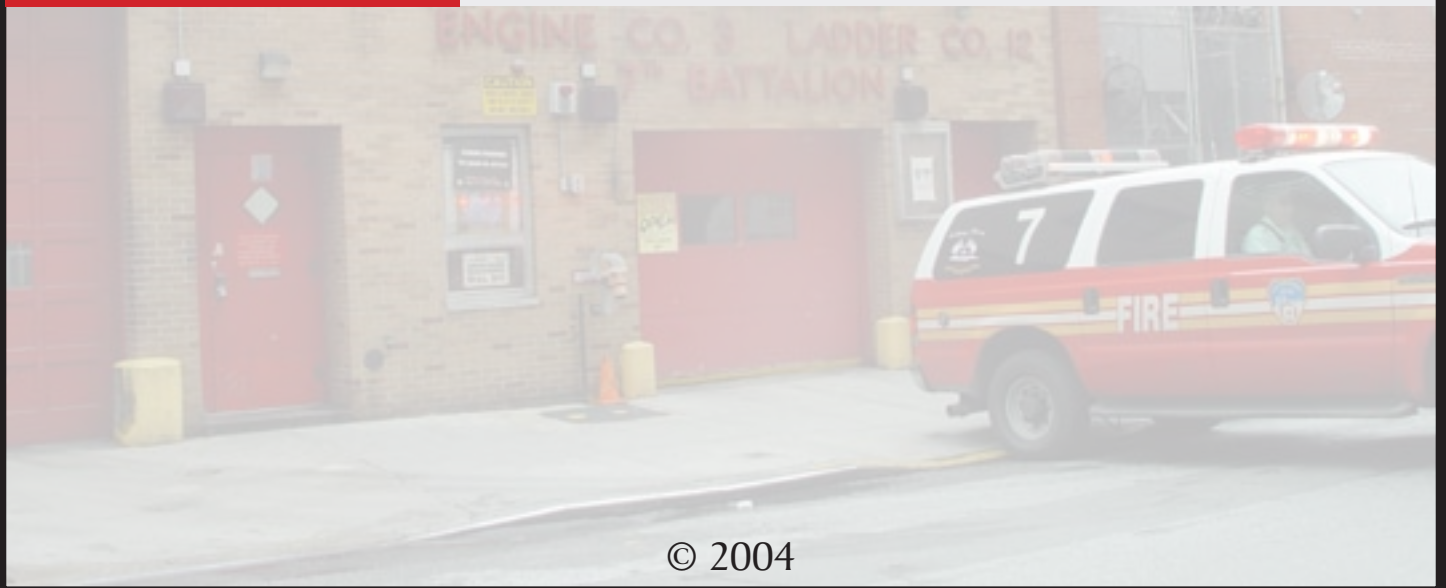
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In gratitude and respect to the New York City firefighters and fire officers.

Introduction

The tragic events of 9/11 brought to the public's attention what first responders have always known: they work on the front line. Their work world is filled with danger, uncertainty, pressure and stress where decisions must be instantaneous and planning is often a luxury. In the post-9/11 world, all citizens have become more aware of the significant role of first responders, whether they are firefighters, EMS personnel, or police. After 9/11, New York City's 11,000 firefighters and officers in particular, were briefly lauded as America's "new heroes" and the City's "foot soldiers" in the war against terror. However, little attention has been paid to the day-to-day work life of firefighters and there is little empirical information about the nature and emotional impact of this work.

Firefighters, like other first responders, work under tremendous time pressure and a great deal of uncertainty. What may initially seem like a manageable situation can quickly get out of control. Under these conditions, every second counts and every decision can impact whether lives are saved or lost. One fire officer described such a situation:

> *The fire was blowing out of two windows, third or fourth floor of a tenement. We couldn't get the door open, there were so many locks on the door that it just didn't pop early. So we had guys working on the door. Then it got really hot. When we finally got the door open and we went in with the line, there was a baby carriage. Now we had to go over the baby carriage and guys were getting caught…Now the fire is expanding because we're giving it more time. We have people coming down from above screaming. We don't have control of this fire so we don't want them coming down. Now we have too many people in the hallway and our own people can't get above us…The fire went to third or fourth alarm and I said to myself, I can't believe that happened. That was something I didn't expect. That's when I realized that when you go to a fire, every time you better be thinking. You better realize that nothing is the same. Anything can happen at any time.*

This high-risk work environment requires that firefighters and officers must make quick decisions with limited information. Therefore, communication at the scene among firefighters and officers is critical. As one firefighter told us:

> *First you have to somehow control the fire, then contain it, then extinguish it. Where are you in this process? You have to know what is going on. You have a radio, you don't always have to talk, but you have to listen, you have to know where we are in this whole process because decisions have to be made about rescues, about people trapped above the fire, based on where we are.*

There are a variety of strategies for gaining control of the fire, extinguishing it and conducting searches which have to be evaluated and implemented within seconds

or minutes. The type of building, the time of day, the number of people inside all affect what decisions get made and as the circumstances change, so must these decisions. These decisions are made based on a body of technical knowledge and skills (e.g. of chemical reactions, building construction, firefighting procedures) gained through formal training, the mentoring relationships between junior and senior firefighters, and extensive job experience. Like emergency room physicians, firefighters need to be able to detect "signs and symptoms" (e.g. where the fire is, how hot it is, where the fire might spread, how many people at risk, etc.) and continuously assess which tactics need to be implemented while anticipating worst case scenarios.

Effective firefighting requires self-managing teams that coordinate the expertise and actions of the individual members. New York City firefighters are assigned to companies (more commonly referred to as either the "engine" or "truck") consisting of approximately 20-30 members. Five or six members of the company work as a team on each shift. At the scene of a fire, each member has a pre-assigned position associated with particular tools and tasks and it is critical that each member get to his "position" and perform effectively. Furthermore, individual members have special aptitudes and physical abilities for particular positions and the team adjusts in order to take advantage of each member's strengths and minimize weaknesses. With time and experience team members develop a tacit understanding of who does what best and how to operate together. One firefighter explained:

> It's like the all-star hockey team. If you take the best hockey players in the world and put them on a team, they're not going to beat the best team in the National Hockey League, never. They've got better players, but they don't play together every day. They don't know each other, they don't work together. They don't have this common trust. They don't know that Mike can do this better than anybody, and Joe can do that better than anybody…Firefighting is a team thing, it's not about a bunch of all-stars. It's about working together as a group. That takes time and it takes experience. It can never be duplicated when you randomly throw people together.

This tacit understanding is developed through reflective team-based learning which emphasizes technical expertise, personal accountability, and commitment to the team. One firefighter described this reflective process in the following way:

> When the fire is out, you come back to the kitchen, sit down, and talk about what you did, what you didn't do, and why you did it. This post-script is incredibly helpful. It's key to what firefighters do and it's one of the reasons why guys have to do their job… Somebody is going to say, "Hey Mike what did you do? How come you didn't get to the roof?" It's inexcusable…You had to finish your assignment, and if you didn't, you had to let people know you didn't for a reason. We count on each other so much. This post-critique involves sitting around the kitchen hashing it out—what did we do, what could we have done differently?

We're our own worst critics. The guys are very tough on each other. You could go out and put out the greatest fire, and guys are saying, "We should've taken that room on the right first and then went to the room on the left."

These discussions are initiated by the firefighters and officers on the team and reflect the team's preoccupation with ensuring and improving the quality and safety of its performance. It is the self-critical and high performance-oriented nature of these teams that make firefighters so effective while working under conditions of extreme uncertainty. This is a unique aspect of firefighting, one that many private sector organizations aspire to but are seldom able to achieve.

In this context, the Smithers Institute at the School of Industrial and Labor Relations, Cornell University conducted a study of New York City firefighters and officers to better understand their daily work life and to document key issues of concern. This report summarizes some preliminary descriptive findings from the study and reflects the perceptions of New York firefighters and officers regarding their work, health and safety in a post 9/11 world.

The report is divided into six sections. The first section describes daily job pressures (e.g., workload, communication, injuries, and exposure to critical incidents). The second section describes job hazards and safety concerns. The third section describes resource adequacy. The fourth section describes the organizational and occupational context of firefighting in NYC. The fifth section describes some indicators of firefighters' emotional health (i.e., traumatic stress, chronic stress, depression, anxiety, and drinking problems. The sixth section, describes firefighters' help-seeking behavior and use of counseling services. Results for firefighters are presented separately from those of officers, although there is an extremely high level of similarity and consistency in the responses of both these groups.

The study was fully funded by the Smithers Institute at the School of Industrial and Labor Relations. The findings presented in this report are based on survey data collected from New York City firefighters and officers during the summer and fall of 2003. In total, out of a target sample of some 3,600 firefighters and officers, data were collected from 1,653 firefighters and 379 officers; approximately 2/3 of whom were on the scene at the World Trade Center on 9/11. The target sample represents one third of all NYC firefighters. Rather than identifying a random sample of firefighters, we drew a stratified, random sample of 144 fire companies (out of approximately 350 FDNY companies) and targeted all of the members of these companies (typically between 20-30 firefighters and officers per company) for data collection. Stratification was based on the relative work intensity of each company (i.e., average daily runs). We used the FDNY's three-category system to differentiate between more and less active firehouses, randomly sampling an equal number of the firehouses from each of these three categories (i.e., 48 from highly active, 48

from moderately active and 48 from relatively inactive) for inclusion in the study. As might be expected in this highly male-dominated workforce, 99 percent of those included in our sample were men. Additional sample characteristics are provided in the Appendix.

The survey instrument was constructed on the basis of published and validated measures. For example, in order to collect data on the average level of incident exposure in past year, we used the CII or critical incident inventory measure developed by Monnier, Cameron, Hobfoll and Gribble (2002). This measure was specifically developed to assess incident exposure among fire fighters and emergency service personnel. Similarly, we based our assessment of traumatic stress, general stress, depression and anxiety on widely used, validated measures, namely the Impact of Event Scale-Revised (Weiss, D.S. & Marmar, C.R. 1997), and the 21-Item Version of the Depression Anxiety Stress Scale (DASS) (Antony, Bieling, Cox, Enns & Swinson, 1998; Lovibond & Lovibond, 1995). References are provided in the Appendix.

We are especially grateful to the leadership of the Uniformed Firefighters Association and the Uniformed Fire Officers Association who saw the need for such a study and gave us the opportunity to carry it out. First, we would like to give special recognition to Philip McArdle, Sergeant-at-Arms UFA, who took the lead and helped this study overcome many hurdles. Stephen Cassidy, President, UFA and Capt. Peter Gorman, President, UFOA understood the intent and actively encouraged their members to participate. We would also like to thank Joe Miccio, Recording Secretary UFA, Capt. Mike Currid, Sergeant-at-Arms UFOA, Battalion Chief Richard Goldstein, Lt. Jim McGowan, Financial Secretary UFOA, Anne Fenton, and Firefighters Tony Caracciolo and Tony Salerno for their active involvement throughout the process. Also, a special thanks to the union delegates for taking a leadership role at the company level and making this study possible.

Above all, we would like to thank each firefighter and officer who took the time to fill out this long questionnaire. They completed this questionnaire with the hope that it would only improve the work life of firefighters and enhance the quality of this important community service. We hope that this report leads to a dialogue among firefighters and officers, labor and management, political leaders and union leaders to improve the work world of firefighters, and thus, to enhance the public safety of all citizens of New York City.

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I. Daily Job Pressures

The daily work life of a firefighter is physically and emotionally demanding. In this section we document some of the pressures that come to bear on firefighters. Specifically we provide data on overall workload, incident communication, job-related injuries and involvement in critical incidents.

Workload:
As can be seen in the figures below, nearly 90% of participating firefighters and 85% of participating fire officers reported making at least six to ten runs in an average, 24-hour shift during the past month. Nearly fifty percent reported being employed in companies which averaged 11-15 runs per 24-hour shift in the past month. In 95% of the cases, firefighters and officers estimated that the number of runs reported for the past 30 days was either at or somewhat below the average monthly response rate for their company.

Firefighters:

In the past 30 days, on average, how many runs did you typically respond to per 24-hour shift?

Category	percent of respondents
0-5 runs	13
6-10 runs	44
11-15 runs	31
16-20 runs	7
More than 20 runs	5

Fire Officers:

In the past 30 days, on average, how many runs did you typically respond to per 24-hour shift?

Category	percent of respondents
0-5 runs	15
6-10 runs	49
11-15 runs	31
16-20 runs	5
More than 20 runs	1
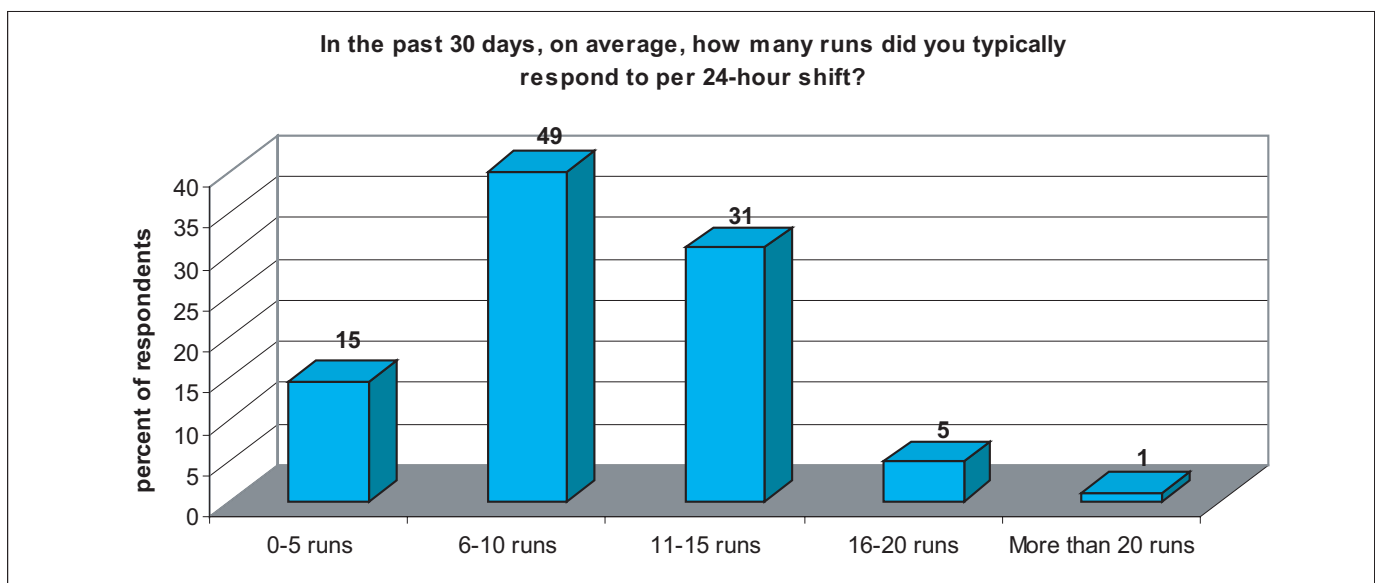
Incident Communication:

Being able to communicate and having adequate information are critical factors for firefighters. These factors affect how quickly and effectively firefighting teams are able to do their job.

We asked survey participants to indicate, during the past month, how often they had difficulty communicating and sharing information while working at fires and emergencies. As shown in the following figures, 61 % of respondents indicate that occasions arise when they are unable to communicate with colleagues despite some critical need to do so. Similarly, three-quarters of those surveyed reported receiving incorrect or inadequate information regarding the location or magnitude of a fire, and nearly two thirds of the survey participants reported being unable to hear/read instructions from other firefighters or officers.

Firefighters:

Incident Communication:

How often during the past month have you experienced the following while working at fires or emergencies?

Legend: often, sometimes, never

	often	sometimes	never
could not read/hear instructions due to noise etc.	14	58	28
lack of information about location/magnitude of fire	18	69	13
incorrect information about location/magnitude of fire	11	75	14
unable to communicate with colleagues when necessary	11	61	29

percent of respondents

Fire Officers:

Incident Communication: How often have you experienced the following in the past month while working at fires or emergencies?

Legend: often, sometimes, never

- could not read/hear instructions due to noise, etc.: often 23, sometimes 65, never 12
- lack of information about location/magnitude of fire: often 23, sometimes 68, never 9
- incorrect information about location/magnitude of fire: often 12, sometimes 74, never 14
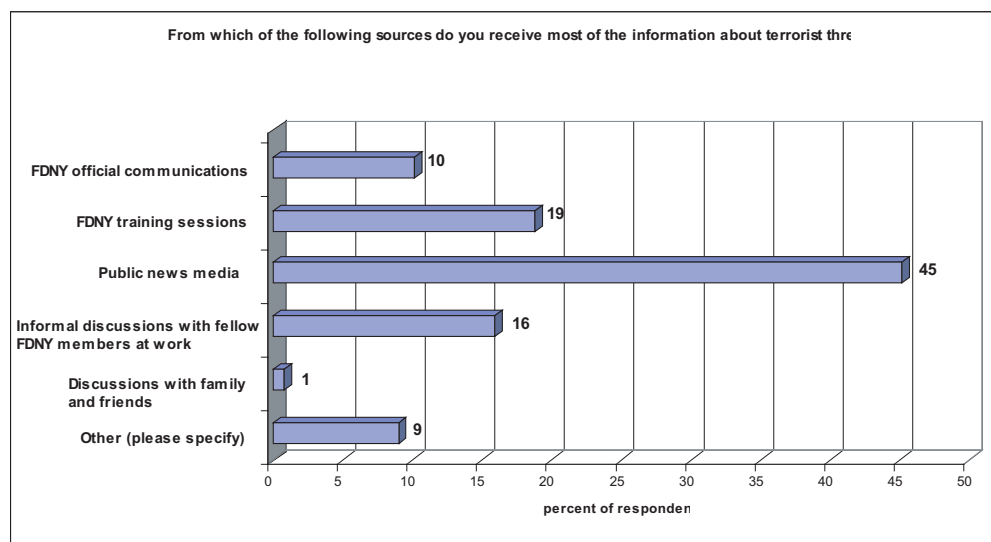- unable to communicate with colleagues when necessary: often 15, sometimes 65, never 20

percent of respondents

After 9/11, preparing for and confronting terrorism has become a primary concern of firefighters and officers. In addition to more routine processes of communication and information sharing, we also asked firefighters about receiving information regarding terrorism threats and other incidents that may involve hazardous materials. Seventy percent of those firefighters and officers surveyed reported that they receive very little information about terror-related events at work.

When asked about the sources of such information, the public news media emerged as the primary source for such information as can be seen in the figures below.

Firefighters:

From which of the following sources do you receive most of the information about terrorist threats?

- FDNY official communications: 10
- FDNY training sessions: 19
- Public news media: 45
- Informal discussions with fellow FDNY members at work: 16
- Discussions with family and friends: 1
- Other (please specify): 9

percent of respondents

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Fire Officers:

From which of the following sources do you receive most of the information about terrorist threats?

Source	Value
FDNY official communications	27
FDNY training sessions	7
Public news media	50
Informal discussions with fellow FDNY members at work	6
Discussions with family and friends	1
Other (please specify)	8

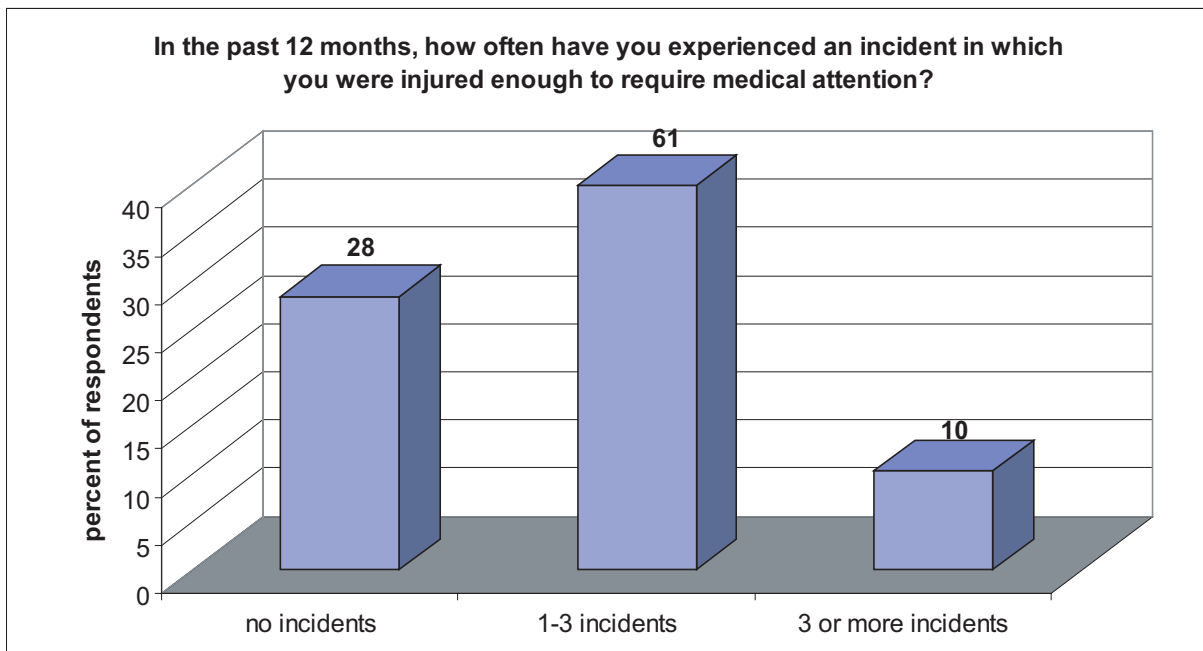**Injuries:**

Given that firefighting is both physically demanding and risky work, it comes as no surprise that firefighters incur injuries on the job relatively frequently. We asked the survey participants to indicate how many incidents during the past 12 months they experienced in which they were injured enough to require medical treatment (i.e. broken bones, excessive smoke inhalation, lacerations requiring sutures, severe burns, tendon/muscle injuries). As can be seen in the following figures, only 28% of firefighters participating in the study (and 45% of fire officers) reported having gone completely uninjured over the course of the previous 12-month period.

Firefighters:

In the past 12 months, how often have you experienced an incident in which you were injured enough to require medical attention?

Category	percent of respondents
no incidents	28
1-3 incidents	61
3 or more incidents	10

Fire Officers:

In the past 12 months, how often have you experienced an incident in which you were injured enough to require medical attention?

Interestingly, we found that many line-of-duty injuries are not reported by firefighters to the FDNY. Specifically, 65 % of participating firefighters and 68 % of officers reported incurring at least one injury over the previous 12-month period serious enough to require medical attention but that was, nevertheless, never reported to the FDNY.
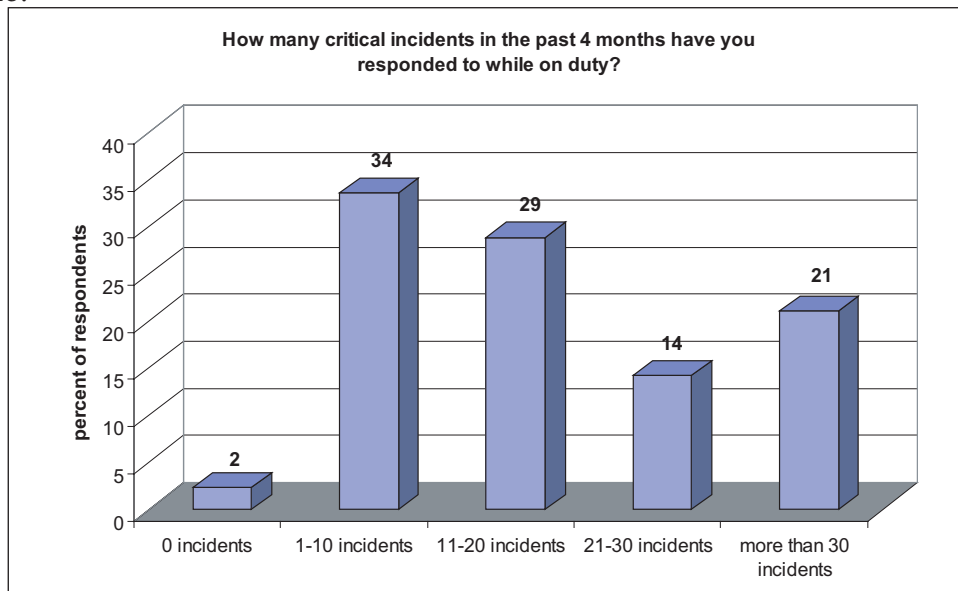
Critical Incident Exposure:
While a work-related injury is obviously one of the greatest risks in firefighting, frequent exposure to critical incidents can also be harmful to firefighters. Critical incidents are those that are sudden, overwhelming and dangerous either to one's self or others. Specifically, these are incidents that involve severe injury, fatalities, child victims, serious threat to life etc. Trauma research has shown that frequent exposure to critical incidents can contribute to the development of a variety of mental health disorders such as, post traumatic stress disorder, substance abuse and dependence, depression, and/or anxiety.

While involvement in a critical incident can be emotionally difficult for anyone, firefighters may feel especially bothered because of their heightened sense of responsibility for protecting life and property in their communities. One fire officer commented, "I was always told as a probie that you didn't start the fire, so don't feel responsible. But you do anyway." Furthermore, while firefighters consider death or severe injury to be "part of the job", the sudden loss of co-workers who are also close friends can be particularly difficult, as one firefighter explained:
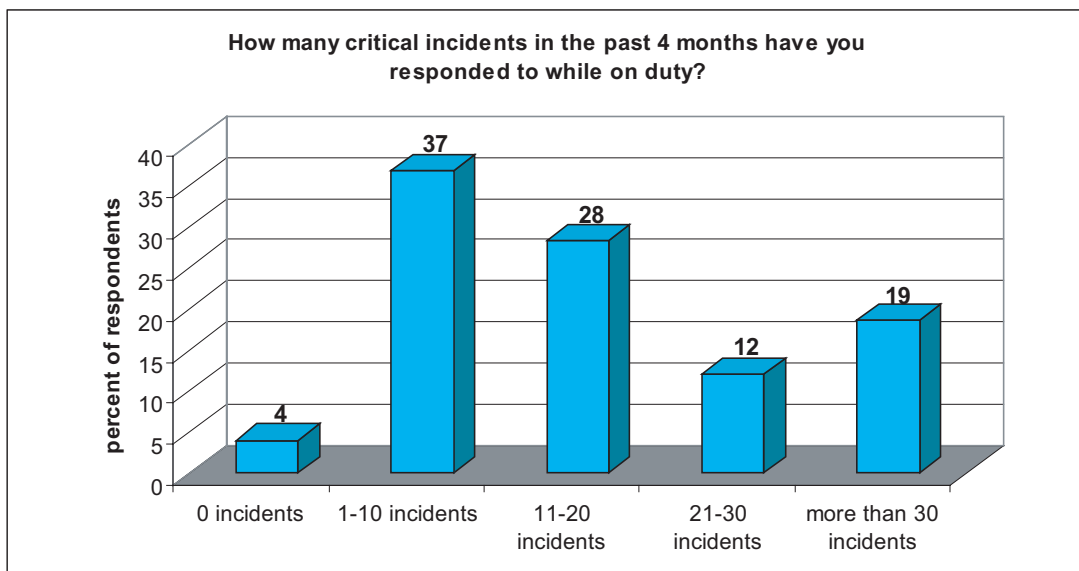
> It was morbid. I walked in [to the firehouse] they told me that __was dead, they told me that __ was burnt over 75-80% of his body, and __was burnt almost 90% of his body, all 3rd and 4th degree burns. I remember just standing there and basically collapsing into 2 guys arms. Now what?... Here I was a young fireman, I just lost my business partner on the outside before we were even firemen, I'm going to lose 2 more guys because we knew that they're not coming back from 4th degree burns. __died, __ suffered almost a full day and __ suffered another 41 days. How do you go 41 days with 4th degree burns over 90% of your body? Your kidneys are shutting down, everything is failing, the pain has to be insurmountable, not only for you but for your family. How do you sit through this? How do you make sense of it?

Using the Critical Incident Inventory (Monnier 2002), we asked firefighters how often they have experienced a variety of critical incidents involving severe medical trauma, fatalities of both known and unknown victims, child victims, severe injury to fellow firefighters, etc. during the past 4 months. As can be seen in the table below, firefighters are exposed to critical incidents on a fairly regular basis.

Firefighters:

How many critical incidents in the past 4 months have you responded to while on duty?

incidents	percent of respondents
0 incidents	2
1-10 incidents	34
11-20 incidents	29
21-30 incidents	14
more than 30 incidents	21

Fire Officers:

How many critical incidents in the past 4 months have you responded to while on duty?

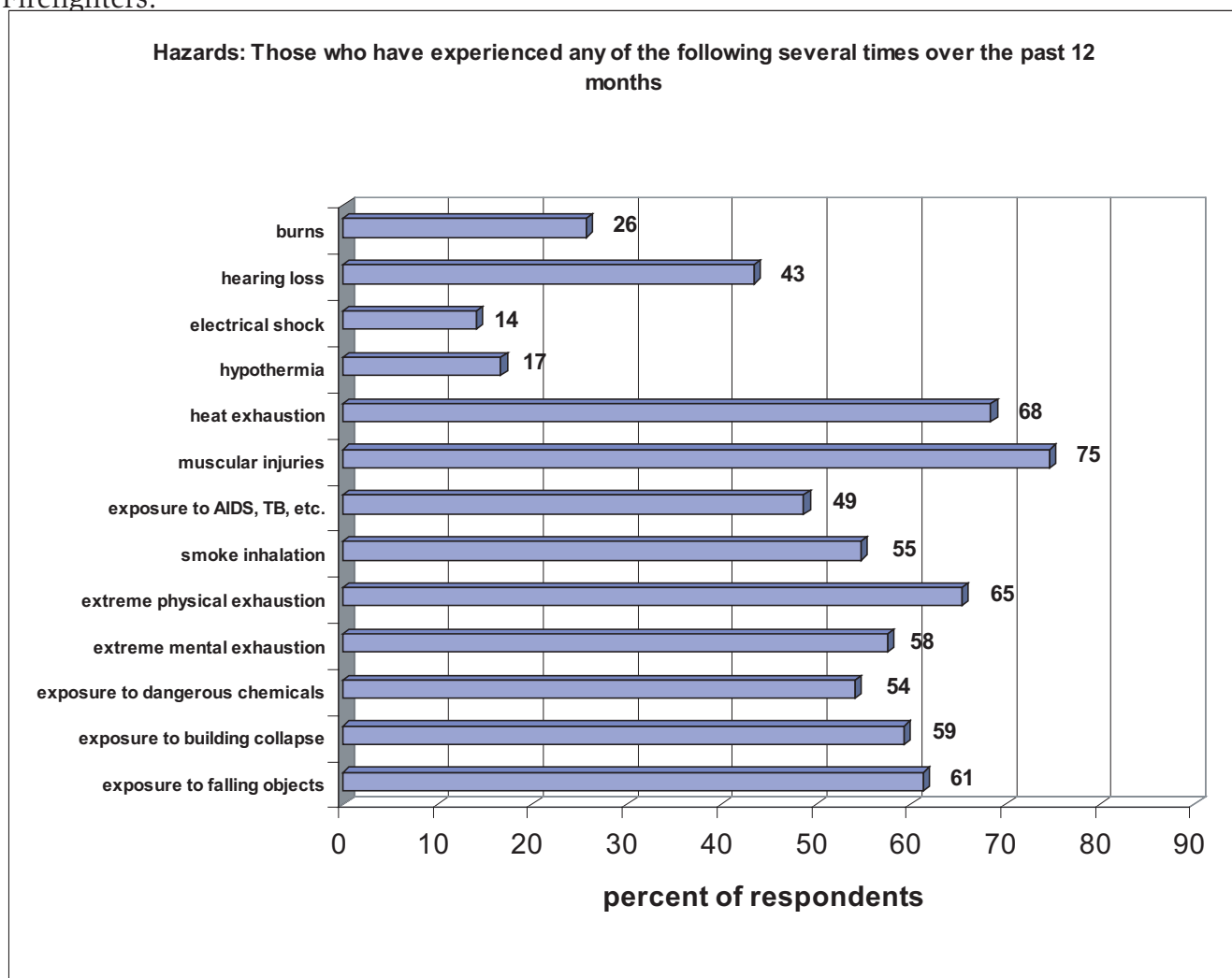| incidents	percent of respondents
0 incidents	4
1-10 incidents	37
11-20 incidents	28
21-30 incidents	12
more than 30 incidents	19

II. Job Hazards and Safety

Obviously firefighting is a dangerous business and safety is an important concern for firefighters and officers. In this section, we report on job hazards, company safety climate and organizational safety climate.
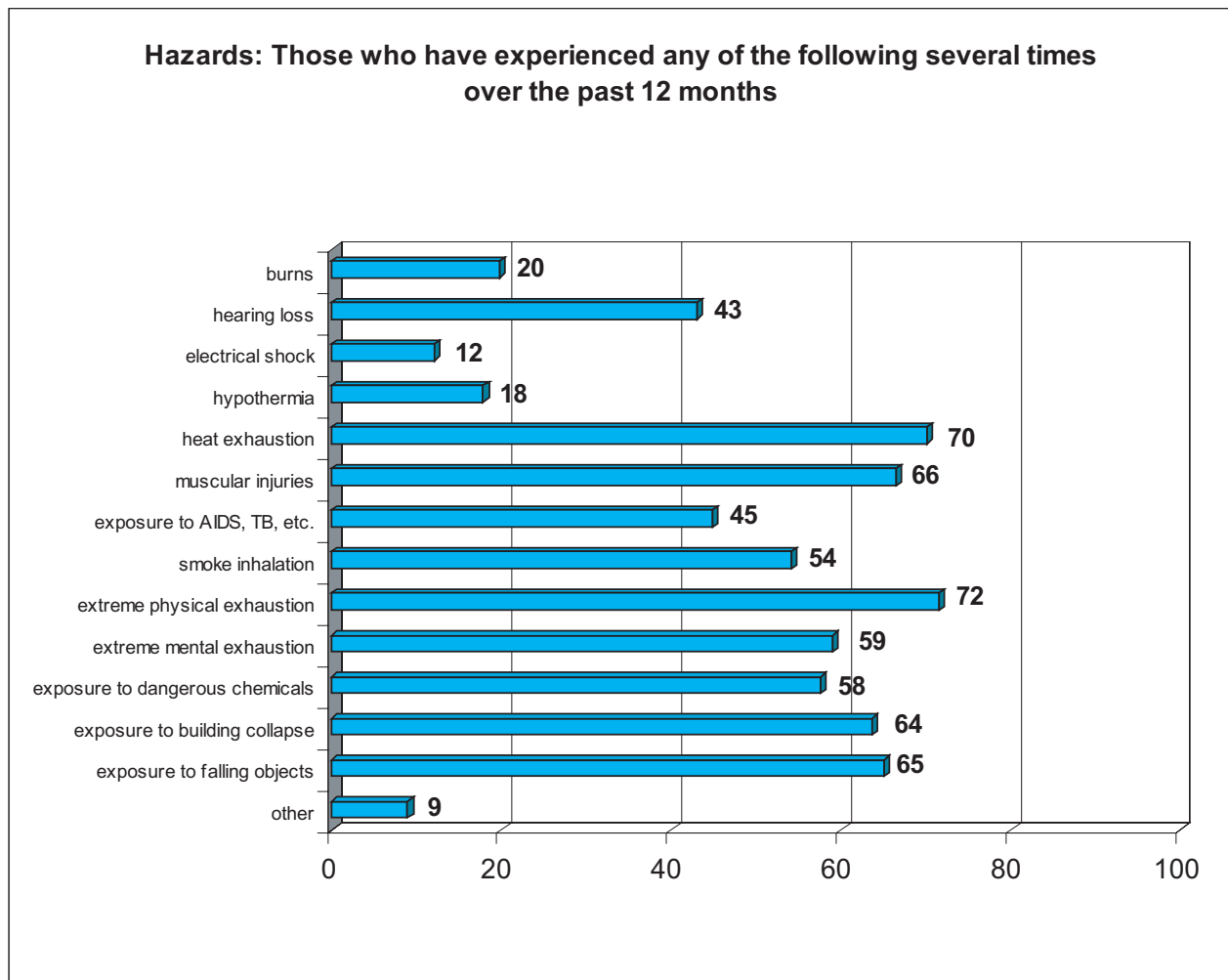
Job Hazards:
Firefighters and officers report being exposed to a wide range of hazards including exposure to dangerous chemicals, communicable diseases, and extreme mental or physical exhaustion. As can be seen in the tables below, at least half of the study participants reported experiencing all of the hazardous condition listed with the exception of burns, hypothermia and electrical shock.

Firefighters:

Hazards: Those who have experienced any of the following several times over the past 12 months

Hazard	Percent
burns	26
hearing loss	43
electrical shock	14
hypothermia	17
heat exhaustion	68
muscular injuries	75
exposure to AIDS, TB, etc.	49
smoke inhalation	55
extreme physical exhaustion	65
extreme mental exhaustion	58
exposure to dangerous chemicals	54
exposure to building collapse	59
exposure to falling objects	61

percent of respondents

Fire Officers:

Hazards: Those who have experienced any of the following several times over the past 12 months

| Hazard	Value
burns	20
hearing loss	43
electrical shock	12
hypothermia	18
heat exhaustion	70
muscular injuries	66
exposure to AIDS, TB, etc.	45
smoke inhalation	54
extreme physical exhaustion	72
extreme mental exhaustion	59
exposure to dangerous chemicals	58
exposure to building collapse	64
exposure to falling objects	65
other	9

Safety Climate:

Safety climate refers to workers' perceptions of the leadership, culture, and resources which are conducive to a safe work environment. Numerous studies indicate that safety-related policies, norms and practices implemented and enforced by supervisors and other organizational leaders are critical determinants of employee safety. In this context, we asked firefighters to indicate how much their company officers and the Fire Department support safe work practices.

Company Safety Climate:

As can be seen in figure below, firefighters believe that their company officers tend to put the safety of those they command before everything else. Specifically, between 65 and 85% of firefighters felt that their company officers implement all of the various practices typically associated with a safety-conscious workplace.

Firefighters:

Firefighter Perceptions of Company Safety Climate:
Company Officers are:
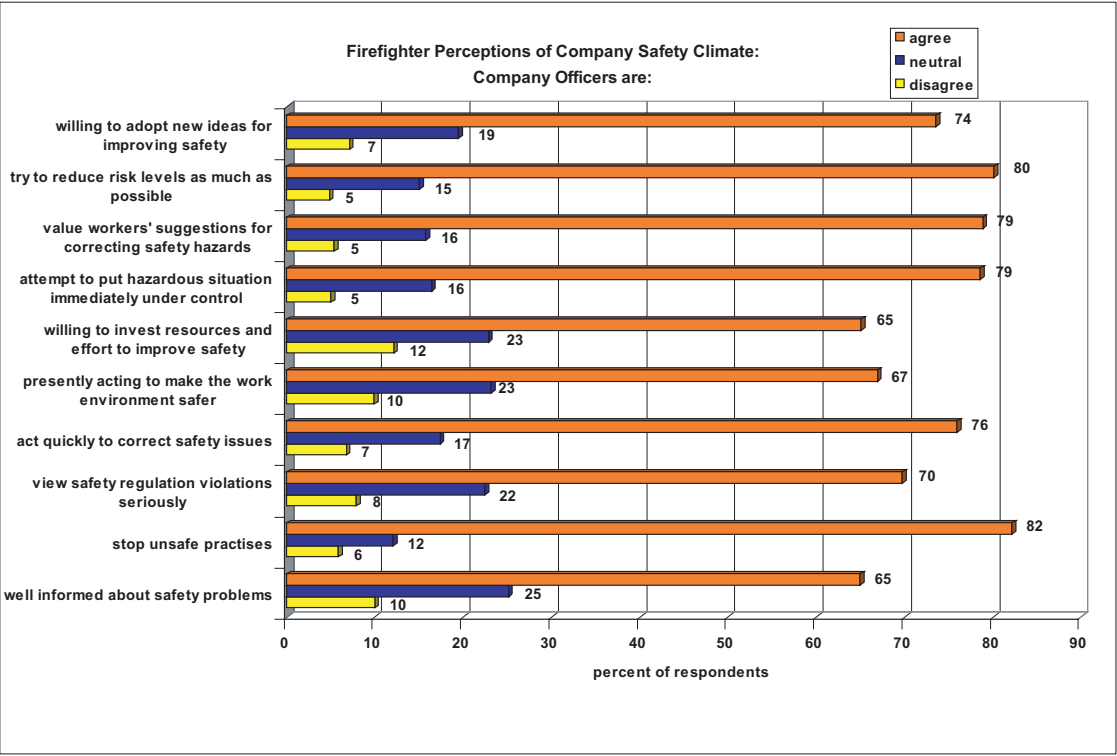
Fire officers were asked a similar set of questions about their self-perceptions of safety. As shown in the figure below, company officers feel safety is important, although, only 33% of the company officers reported that they felt well-informed about safety problems.
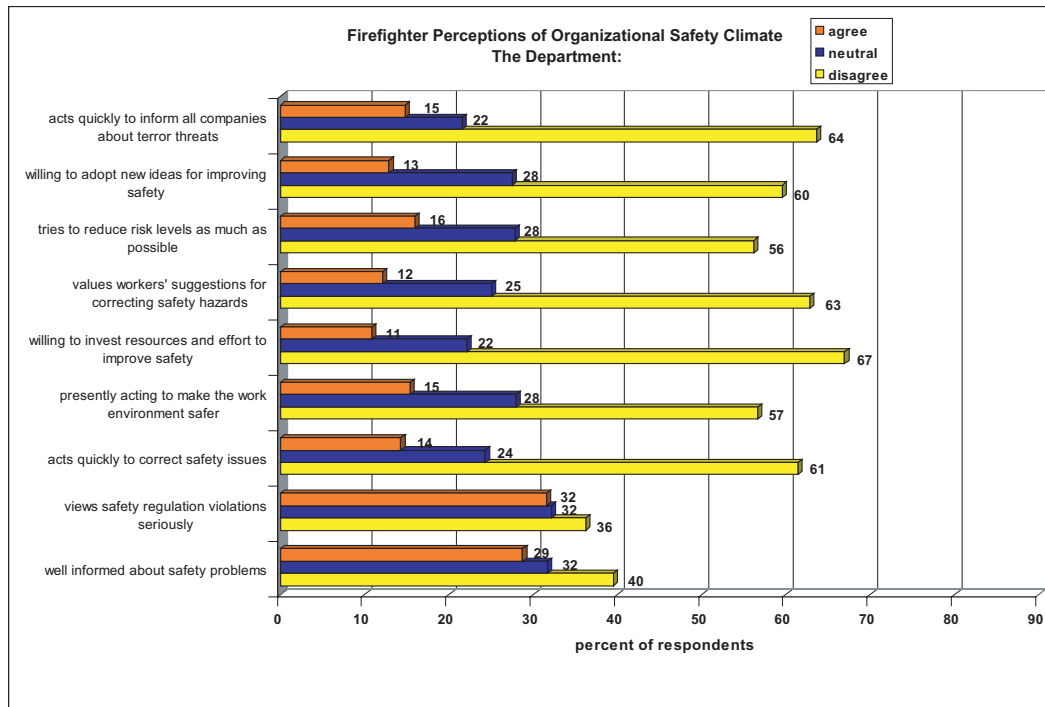
Fire Officers:

Fire Officer Self-Perceptions of Company Safety Climate:
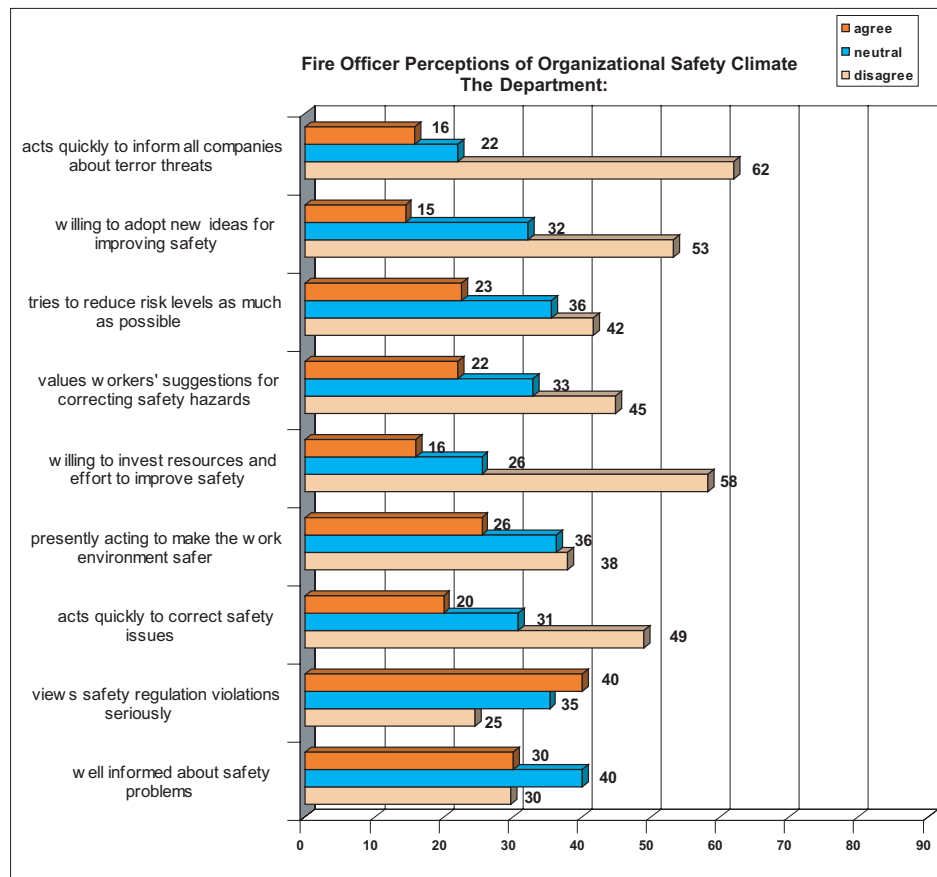Company Officers are:

9
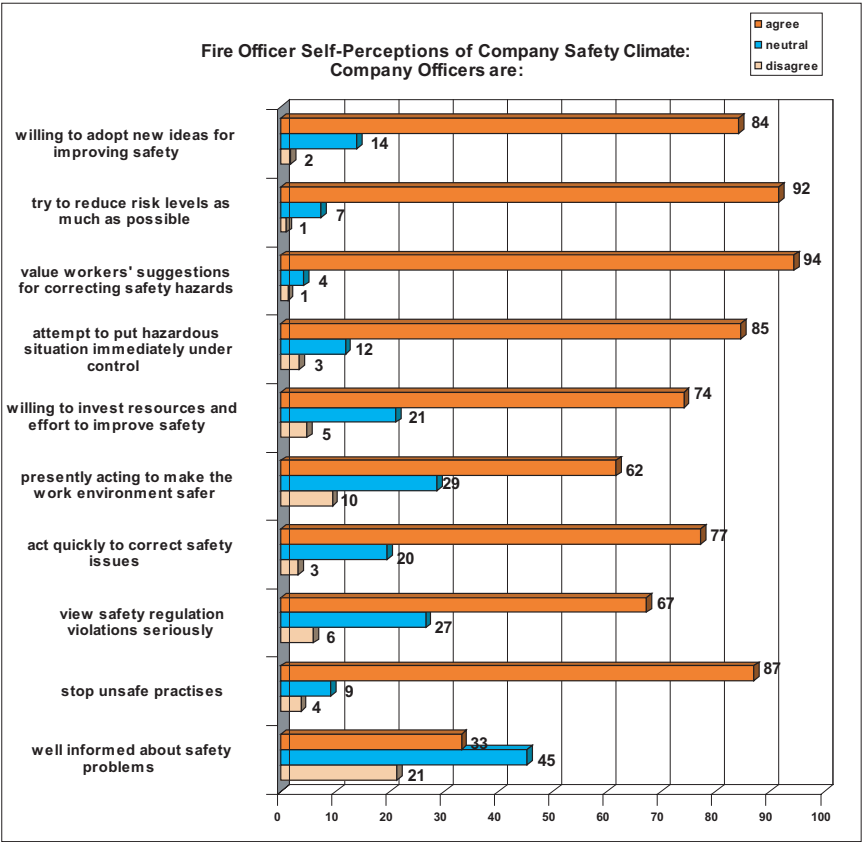
Organizational Safety Climate:

In contrast, as can be seen in the figure below, firefighters and officers perceive that the Department is less active in creating a safe working environment. Asked to indicate the degree to which the Department is willing to implement a similar set of safety-oriented policies and practices, firefighters were more critical of the Department than their company officers. The survey participants perceive that senior-level department officials are unwilling to invest resources in order to enhance firefighter safety, and relatively slow in addressing critical safety issues.

Firefighters:

Firefighter Perceptions of Organizational Safety Climate
The Department:

agree / neutral / disagree

Category	agree	neutral	disagree
acts quickly to inform all companies about terror threats	15	22	64
willing to adopt new ideas for improving safety	13	28	60
tries to reduce risk levels as much as possible	16	28	56
values workers' suggestions for correcting safety hazards	12	25	63
willing to invest resources and effort to improve safety	11	22	67
presently acting to make the work environment safer	15	28	57
acts quickly to correct safety issues	14	24	61
views safety regulation violations seriously	32	32	36
well informed about safety problems	29	32	40

percent of respondents

Fire Officers:

Fire Officer Perceptions of Organizational Safety Climate
The Department:

agree / neutral / disagree

| Category	agree	neutral	disagree
acts quickly to inform all companies about terror threats	16	22	62
willing to adopt new ideas for improving safety	15	32	53
tries to reduce risk levels as much as possible	23	36	42
values workers' suggestions for correcting safety hazards	22	33	45
willing to invest resources and effort to improve safety	16	26	58
presently acting to make the work environment safer	26	36	38
acts quickly to correct safety issues	20	31	49
views safety regulation violations seriously	40	35	25
well informed about safety problems	30	40	30

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III. RESOURCES

Firefighters and officers are also concerned about the resources they have for firefighting, especially the adequacy of training and equipment. These resources are especially important because they directly impact firefighters' ability to work quickly, control chaotic conditions and save lives. Feeling prepared and having reliable equipment enhances their sense of control and their capacity to get the job done. As one firefighter put it:

> *You worry about coming to work and wondering if you are going to have the support you need to get the job done. …I think guys are willing to deal with all the dangers, but they don't like the idea of worrying about not having real equipment that works…"*

Resource Availabilty:

We asked firefighters and officers to assess the degree to which training and equipment are available and their quality. Those surveyed indicated that they cannot always take resource availability for granted. Specifically, over half the respondents reported that key resources such as training, equipment and work supplies are available some of the time. This is especially true with regard to terror-related training. Fifty percent of those surveyed indicated that such training is rarely available.

Firefighters:
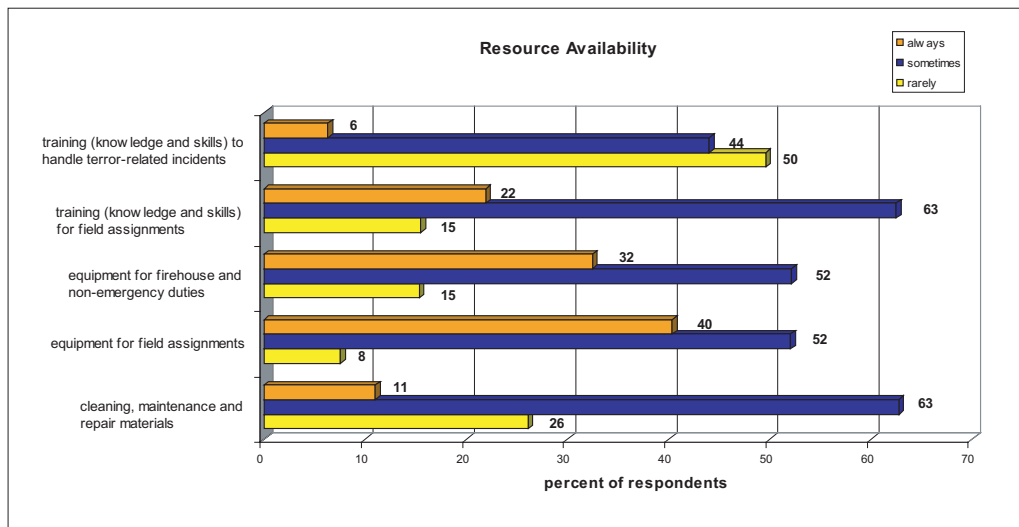
Fire Officers:
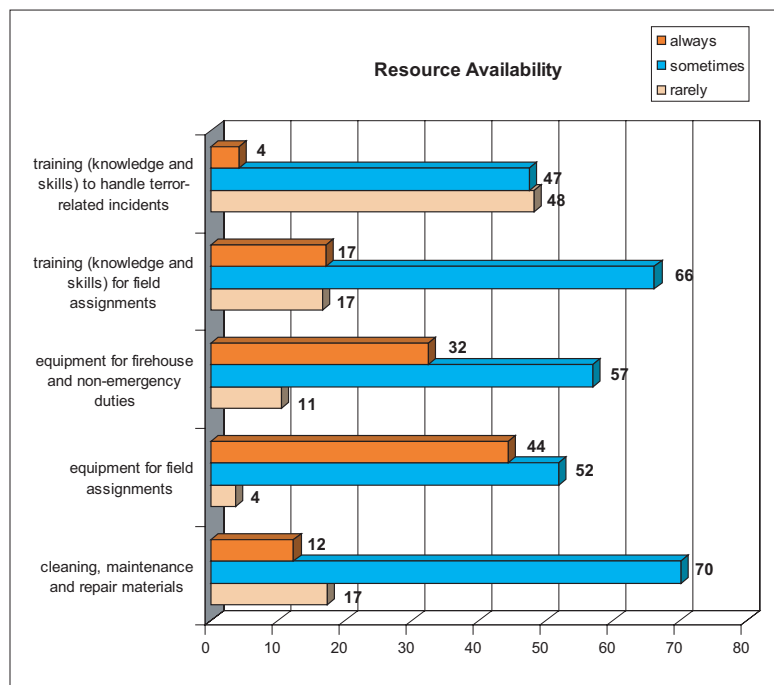
Resource Quality:

When asked to assess the quality of these same resources, most of the respondents indicated that the quality is not consistently high. As can be seen in the figures below, the majority of survey participants indicate that training and equipment are of medium quality. Again, terror-related training is especially problematic—about half of those surveyed felt that terror-related training is of low quality.

Firefighters:
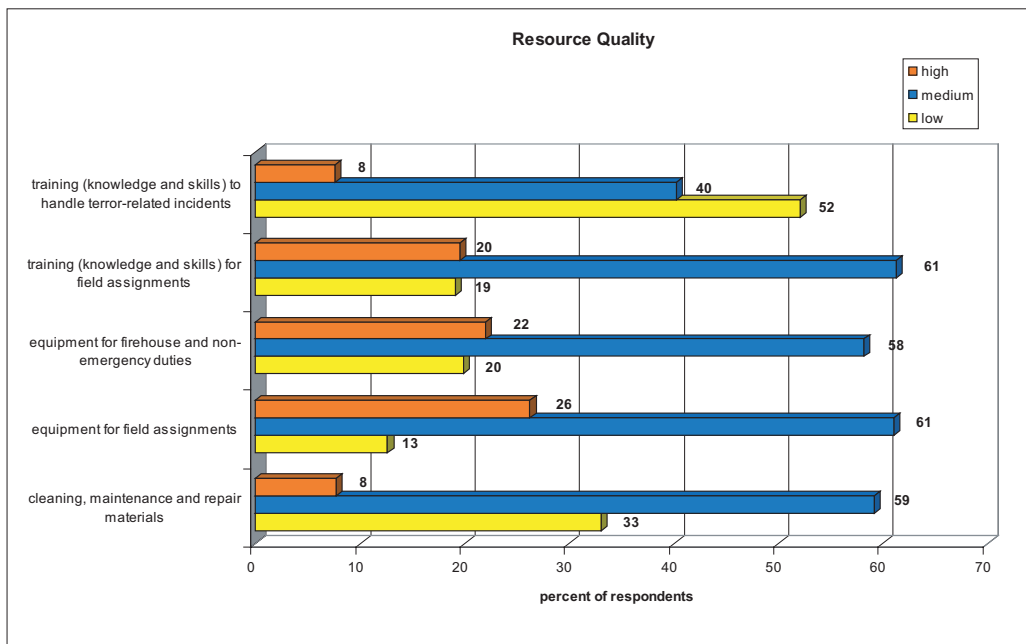
Fire Officers:
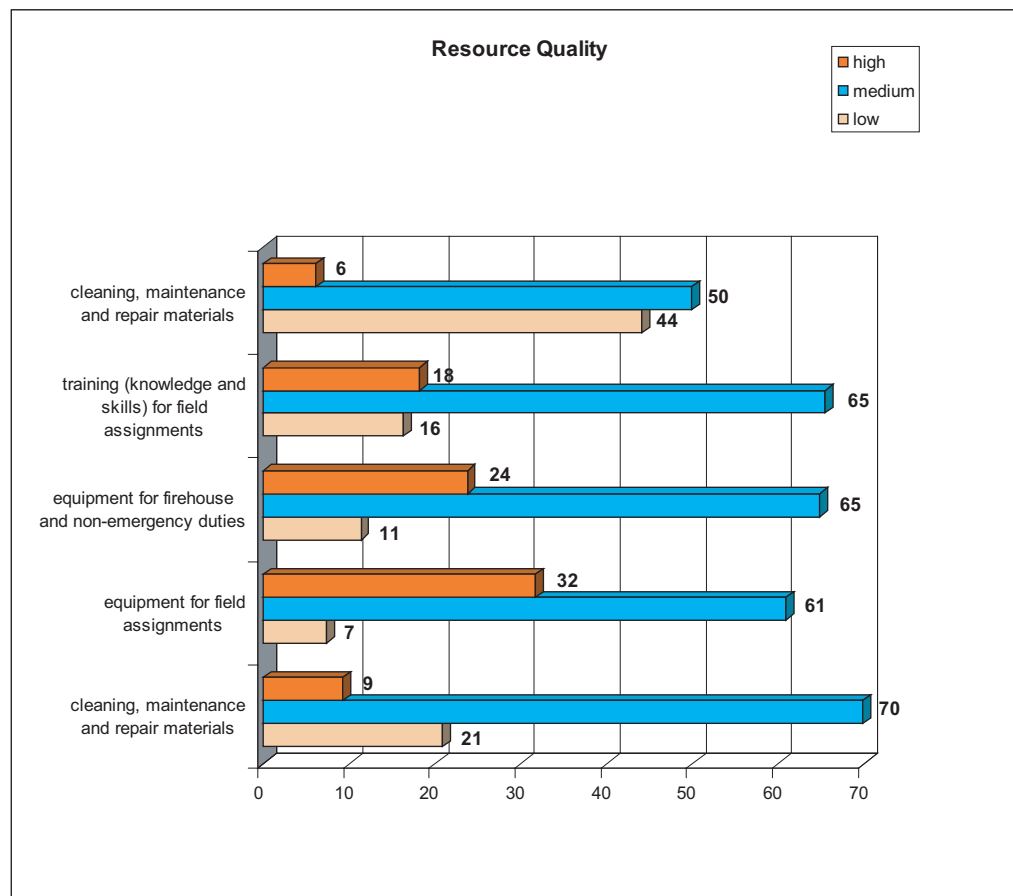
## Maintenance of Firehouse infrastructure:

The firehouse is of particular salience because it serves not only as their base of operation, but also as an important community symbol. Overall the maintenance of firehouse infrastructure is the responsibility of the Department and the day-to-day cleaning and upkeep is done by firefighters themselves.

As can be seen in the figures below, the majority of firefighters and officers expressed disappointment with the FDNY's maintenance of the firehouse especially with regard to heating/air-conditioning, plumbing, roofing as poor and firehouse communication equipment.

Firefighters:

Fire Officers:

13
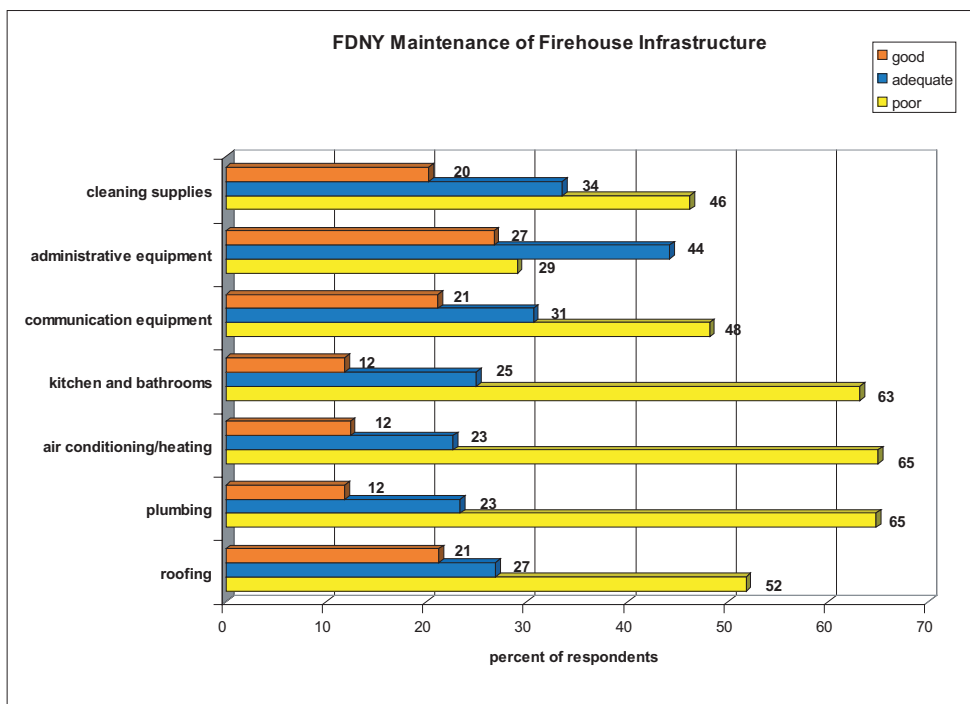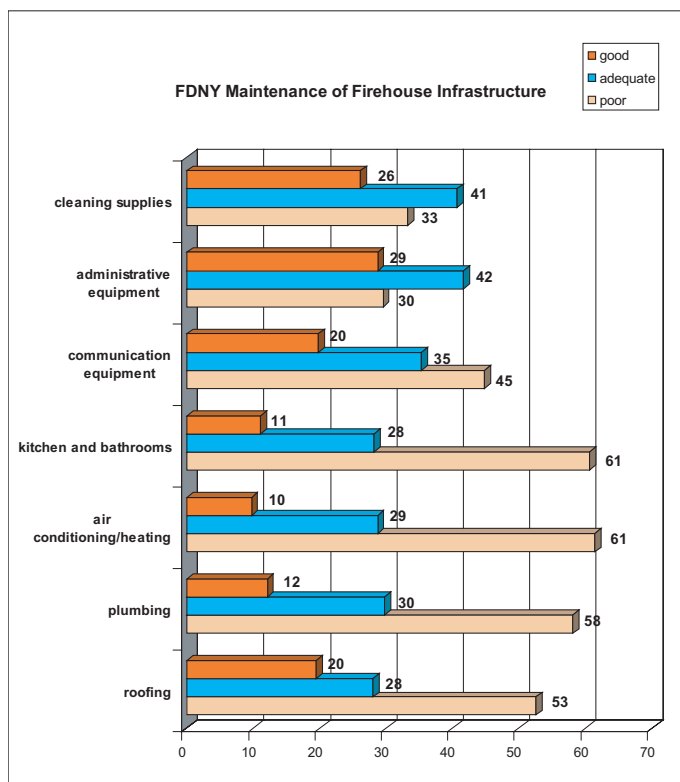
IV. ORGANIZATIONAL CONTEXT

Involvement in Decision-making Processes:
Occupational stress research has consistently found that workers' ability to influence workplace decisions has an important impact on both job satisfaction and employee emotional health. This is particularly true in a high risk work environment.

With this in mind, we asked study participants to assess both the degree of influence they feel that they should have, as well as the degree of influence that they actually have, over key operational and work-site decisions including those relating to work rules, job safety precautions, training, equipment, and job assignments. As can be seen in the figures below, with the exception of job assignment decisions, approximately ¾ of all study participants indicated that they had less input in these decision areas than they felt that they should have.

Firefighters:

Fire Officers:

14
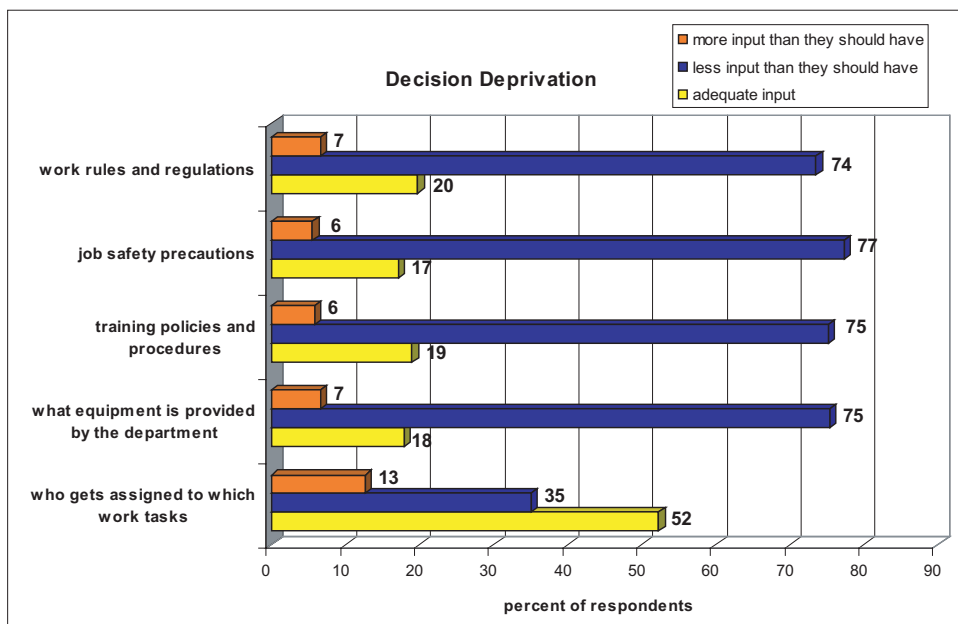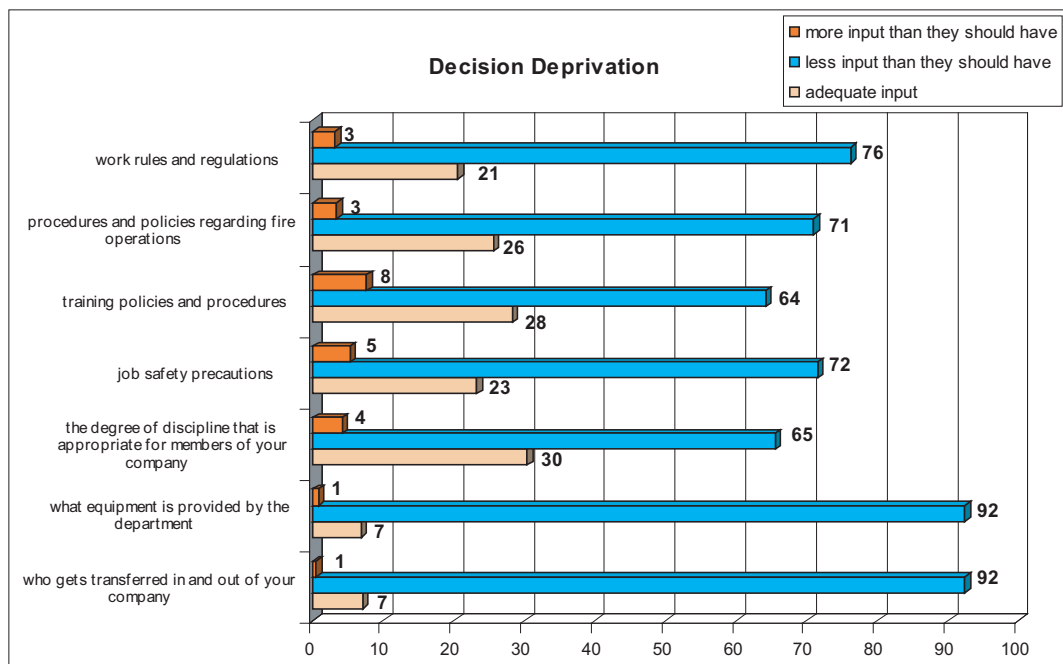
Procedural Fairness:

Procedural fairness refers to workers' perceptions about the degree to which organizational procedures and policies are fair and rational. Organizational studies have shown that procedural fairness is also related to job satisfaction and emotional well-being.
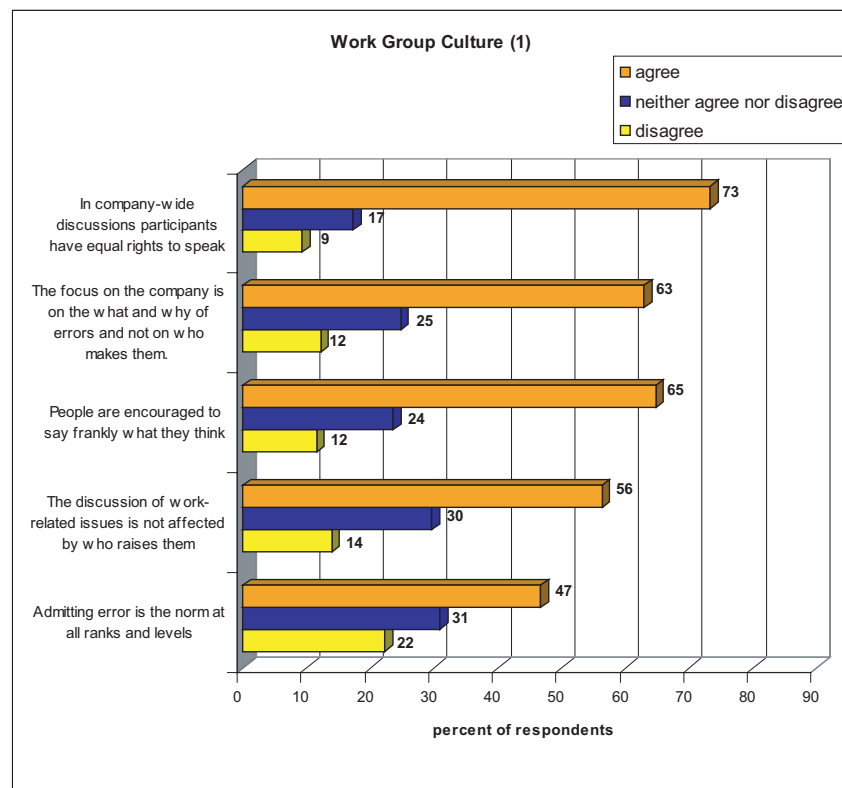
The data indicate that, overall, firefighters and officers are either neutral or positive with regard to the fairness of organizational policies and procedures. However there are some areas of concern. Specifically,
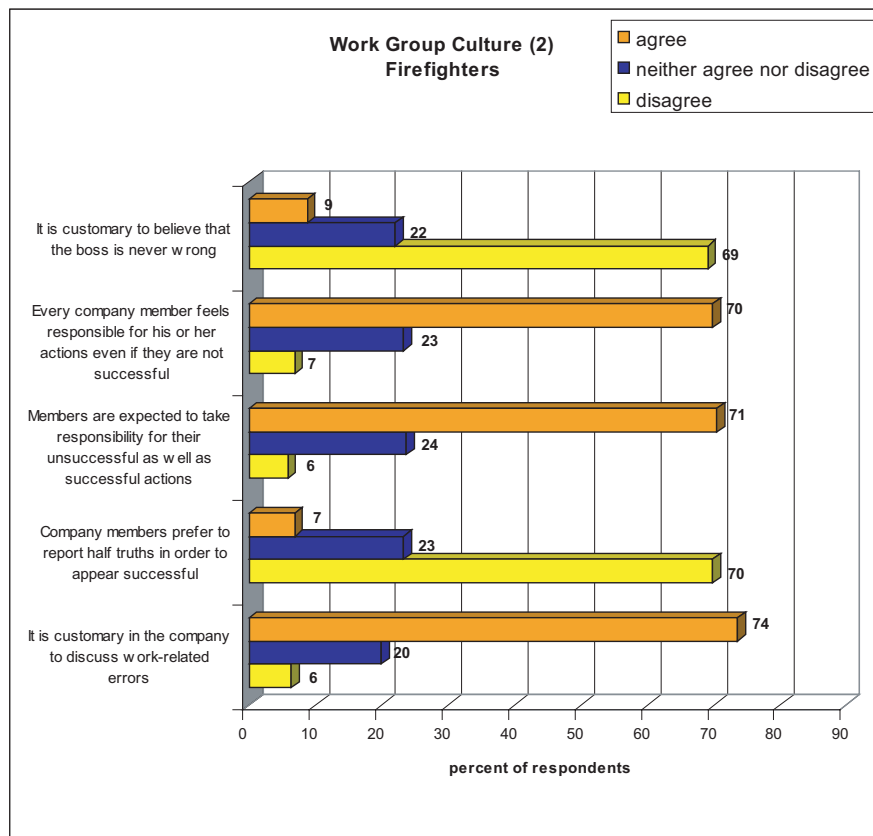
- 65% of firefighter and officer respondents indicated that the procedures used by the FDNY to assess medical problems and determine leave are unfair.

- 62% of firefighter respondents and 40% of officers respondents indicated that they are not aware of the steps they must take to have a disciplinary action taken against them reconsidered

- Nearly half of the respondents(48% of firefighters and 44% of officers) felt that the FDNY would not inform of them of appeal rights if they were subject to a disciplinary action.

- There is a general perception among approximately half of those surveyed (56% firefighters and 44% officers) that when changes are made in the FDNY, employees usually lose out in the end.
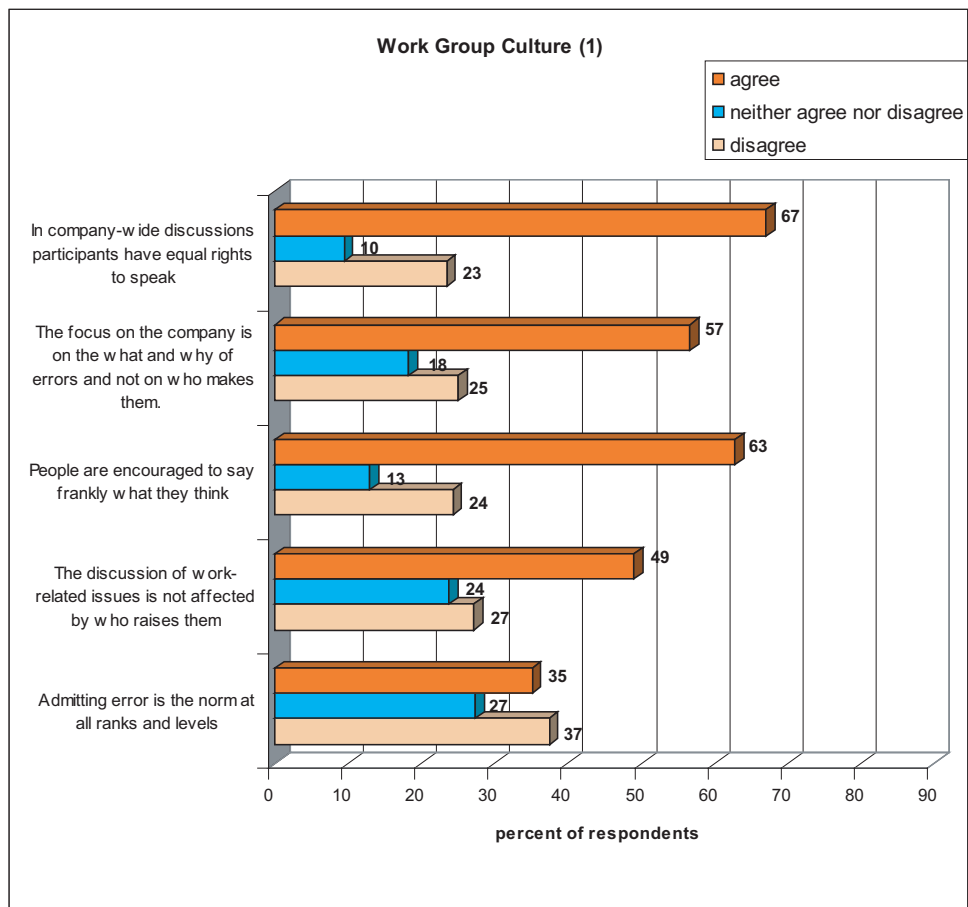
Work Group Culture:

Work group culture refers to workers' beliefs about how work should be done and how they should interact with one another. We asked firefighters about various aspects of their company's work group culture and learning-related norms and values. As can be seen in the following figures, firefighters place a strong emphasis upon open communication among all members, learning from mistakes, and taking responsibility for one's actions.

Firefighters:

Work Group Culture (1)

Legend: agree / neither agree nor disagree / disagree

Statement	agree	neither agree nor disagree	disagree
In company-wide discussions participants have equal rights to speak	73	17	9
The focus on the company is on the what and why of errors and not on who makes them.	63	25	12
People are encouraged to say frankly what they think	65	24	12
The discussion of work-related issues is not affected by who raises them	56	30	14
Admitting error is the norm at all ranks and levels	47	31	22

percent of respondents

15

Work Group Culture (2)
Firefighters

Legend:
- agree
- neither agree nor disagree
- disagree

- It is customary to believe that the boss is never wrong: agree 9, neither 22, disagree 69
- Every company member feels responsible for his or her actions even if they are not successful: agree 70, neither 23, disagree 7
- Members are expected to take responsibility for their unsuccessful as well as successful actions: agree 71, neither 24, disagree 6
- Company members prefer to report half truths in order to appear successful: agree 7, neither 23, disagree 70
- It is customary in the company to discuss work-related errors: agree 74, neither 20, disagree 6

percent of respondents

Fire Officers:

Work Group Culture (1)

Legend:
- agree
- neither agree nor disagree
- disagree

- In company-wide discussions participants have equal rights to speak: agree 67, neither 10, disagree 23
- The focus on the company is on the what and why of errors and not on who makes them.: agree 57, neither 18, disagree 25
- People are encouraged to say frankly what they think: agree 63, neither 13, disagree 24
- The discussion of work-related issues is not affected by who raises them: agree 49, neither 24, disagree 27
- Admitting error is the norm at all ranks and levels: agree 35, neither 27, disagree 37

percent of respondents

Work Group Culture (2)
Officers

Legend: agree / neither agree nor disagree / disagree

Statement	agree	neither agree nor disagree	disagree
It is customary to believe that the boss is never wrong	4	13	83
Every company member feels responsible for his or her actions even if they are not successful	54	22	24
Members are expected to take responsibility for their unsuccessful as well as successful actions	58	20	22
Company members prefer to report half truths in order to appear successful	7	22	71
It is customary in the company to discuss work-related errors	55	22	24

percent of respondents

Social Support:

Firefighters' work group culture encourages them to turn to one another for advice and support. As organizational research has illustrated, peer social support is an important resource for workers in solving both work-related and non work-related problems. This may be particularly true for firefighters.

Traditionally, the occupational culture of firefighters has been characterized by a high level camaraderie, often referred to as "brotherhood". One firefighter explained:

> *What brotherhood means to me is a sense of dependency, that proverbial, "if I fall will you catch me" and knowing the answer is yes…. [Good firefighting involves] Trust—trusting yourself to trust somebody else. You have to be able to trust enough in yourself that you can give somebody else your life, that you can put your life in somebody else's hands.*

As noted above, this sense of trust, interdependence, and support is essential for fighting fires. It also has significant implications for firefighters' emotional health. In many cases, emotional and practical support from others at work can play an important role in buffering individuals exposed to extreme stressors from experiencing the psychological distress often associated with such stressors.

With this in mind, we assessed social support by asking firefighters to indicate how often other firefighters and company officers: a) could be counted on to listen, show understanding, or show they care when things got tough at work, b) could be relied on for advice or information when things get tough at work, c) go out of their way to make work-life easier and d) could be relied on to assist with practical matters/minor emergencies off-duty (e.g. helping move, making repairs to home or car, etc)

17

Not surprisingly, our findings indicate high levels of social support among FDNY firefighters and company officers. Specifically,

- 95% of firefighter and 89% of officer respondents reported that fellow firefighters could often be counted on to listen, show they care or show understanding when things get tough at work.

- 95% of firefighter and 78% of officer respondents reported that fellow firefighters could often be relied on for advice and information when things get tough at work.

- 90% of firefighter and 83% of officer respondents reported that other firefighters often go out of their way to make work-life easier.

- 93% of firefighter and 84% of officer respondents reported that they often rely on other fire fighters to assist with practical matter and minor emergencies off duty (i.e. helping move, making repairs to home or car, etc).

When asked the same set of questions about support received from company officers, firefighters were also positive.

- 92% of firefighter and 97% of officer respondents felt that company officers could of ten be counted on to listen, show they care or show understanding when things get tough at work

- 91% of firefighter and 96% of officer respondents reported that company officers could often be relied on for advice and information at work.

- 83% of firefighter and 91% of officer respondents reported that company officers go out of their way to make work-life easier

- 67% of firefighter and 79% of officer respondents reported that company officers could be relied on to assist with practical matters and minor emergencies off-duty.

Clearly, peers at work were one of the most important sources of emotional support for firefighters following the attacks on the World Trade Center, as one officer commented:

> *In dealing with 9/11, working in the firehouse saved me. Although we lost 15,*
> *the officers and the men drew closer together and instinctively helped each other.*

Leadership:
Another aspect of firefighters organizational context regards the nature and quality of leadership. The relationship between supervisors and subordinates is a critical factor in creating a viable and effective work environment. Just as trust among firefighters is essential for effective teamwork, trust between firefighters and officers is also critical. When asked to describe someone he thought was an ideal leader, one firefighter said:

> *My first Captain, first of all I think he had 25 years on the job when I was a probie, and had worked his entire career in some of the busiest companies. He had this incredible self-deprecating humor. You never thought of him as a boss. You knew he was the boss, but you never thought of him as some unapproachable figure. And yet, when you went to a fire with him, you knew, no matter what happened we were going to make the right decisions because he was in charge.*

In the FDNY each fire company is assigned 4 officers, one Captain and three Lieutenants. We asked study participants to assess the leadership capabilities of the officers assigned to their company. Specifically, firefighters were asked to consider all four of their company officers and assess:(1) the officers' experience and education, and (2) the adequacy of their people skills. As in the case of supervisory support for safe work practices, firefighters indicated that they have a high degree of respect for their company officers in terms of experience, education and people skills.

- 89% of participating firefighters reported that at least three of their four company of ficers had the experience and education required to perform the job.

- 85% of participating firefighters reported that at least three of their four officers had the people skills necessary for the job.

Fire officers were also very positive in their assessment of the leadership skills of the chief officers who supervise them.

- 98% of participating officers reported that at least three of the four chief officers with whom they work have the experience and education necessary for the job.

- 78% of participating officers reported that at least three of the four chief officers with whom they work have the people skills necessary for the job.

Perceived Union Support
One final aspect of firefighters' organizational context is perceived union support which refers to the degree to which firefighters and officers feel that their unions are committed to and support them. Using the Perceived Union Support scale developed by Shore et al. (1994), respondents were asked to assess the degree to which they believed their unions consider members goals and values, are helpful when members have problems, are willing to ensure members have what they need to perform their jobs effectively, are concerned about members opinions, etc.

The data indicate that both firefighters and officers perceive a high level of support from their respective unions. Specifically, 80% of firefighters and 87% of fire officers agreed with statements describing a highly supportive union.

V. Firefighter Emotional Health

The work conditions and experiences discussed above can have critical implications for firefighters emotional health and well-being. In this section we examine the prevalence of traumatic stress, general stress, depression and anxiety. We examine differences between firefighters who were at the World Trade Center on 9/11/01 or during the following two weeks of September, 2001 and those who were not at the World Trade Center at any time during September, 2001.We do not present comparisons for fire officers because only twelve officers in our sample were not at the World Trade Center at some time during September, 2001.

In assessing emotional health, we used a number of standardized scales including the Impact of Event Scale Revised (IES-R), Depression, Anxiety Stress Scale (DASS-21) and the Alcohol Use Disorders Identification Test (AUDIT) (See Apprendix for references). These scales are used as a screening device and the results reported do not represent clinical assessments which must be made by health professionals.

9/11 Traumatic Stress:
Clearly, 9/11 has had a strong emotional impact on New York firefighters and officers. One firefighter commented:
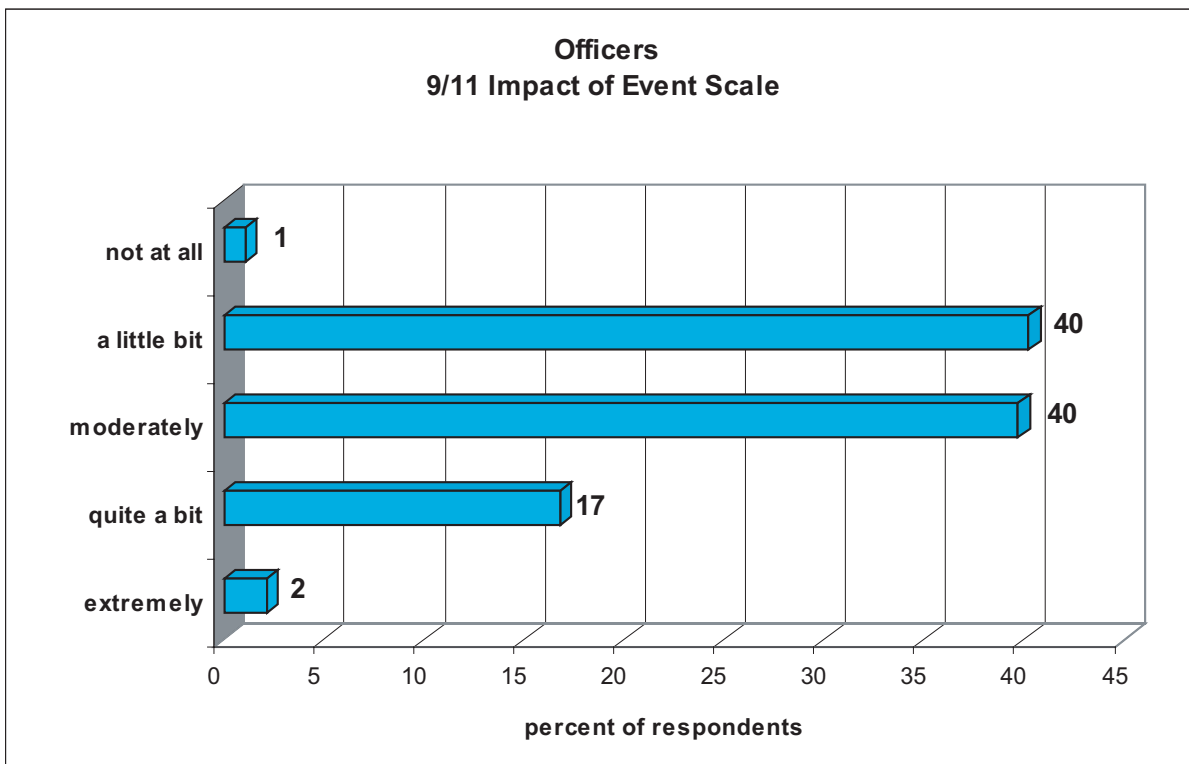
> Unfortunately every fire, emergency or other run I go on I have the thought at the back of my mind of 9-11. If you were one of the first responders, how can you not use the Trade Center as a comparison to every fire, or emergency you respond to?"

Using the Impact of Event Scale, we asked firefighters how often they had recently been bothered by a variety of traumatic stress symptoms associated with 9/11 (e.g. trouble falling or staying asleep and thinking about 9/11 unintentionally, avoiding reminders about 9/11, feeling watchful and on guard). In most cases symptoms of traumatic stress subside over time. However, recent research suggests that individuals who are continuously exposed to multiple critical incidents may experience ongoing traumatic stress. As can be seen in the figures below, many firefighters and officers continue to experience moderate to extreme traumatic stress symptoms.
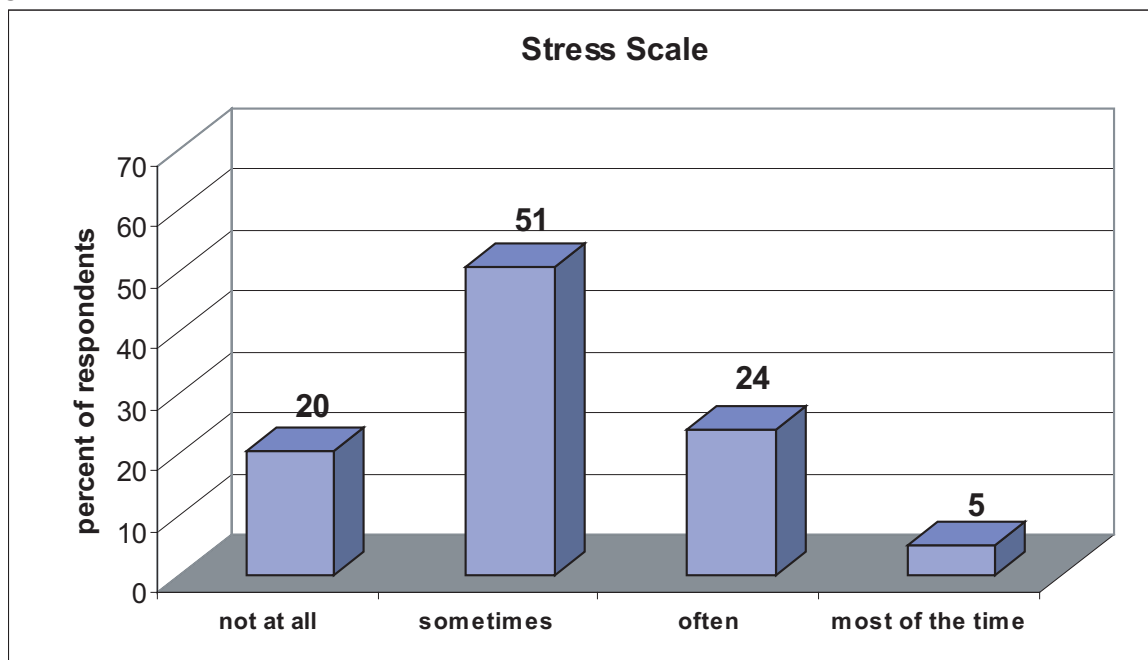
Firefighters:

Firefighters
9/11 Impact of Event Scale

Category	percent
not at all	3
a little bit	41
moderately	38
quite a bit	15
extremely	3

percent of respondents

Fire Officers:

**Officers
9/11 Impact of Event Scale**

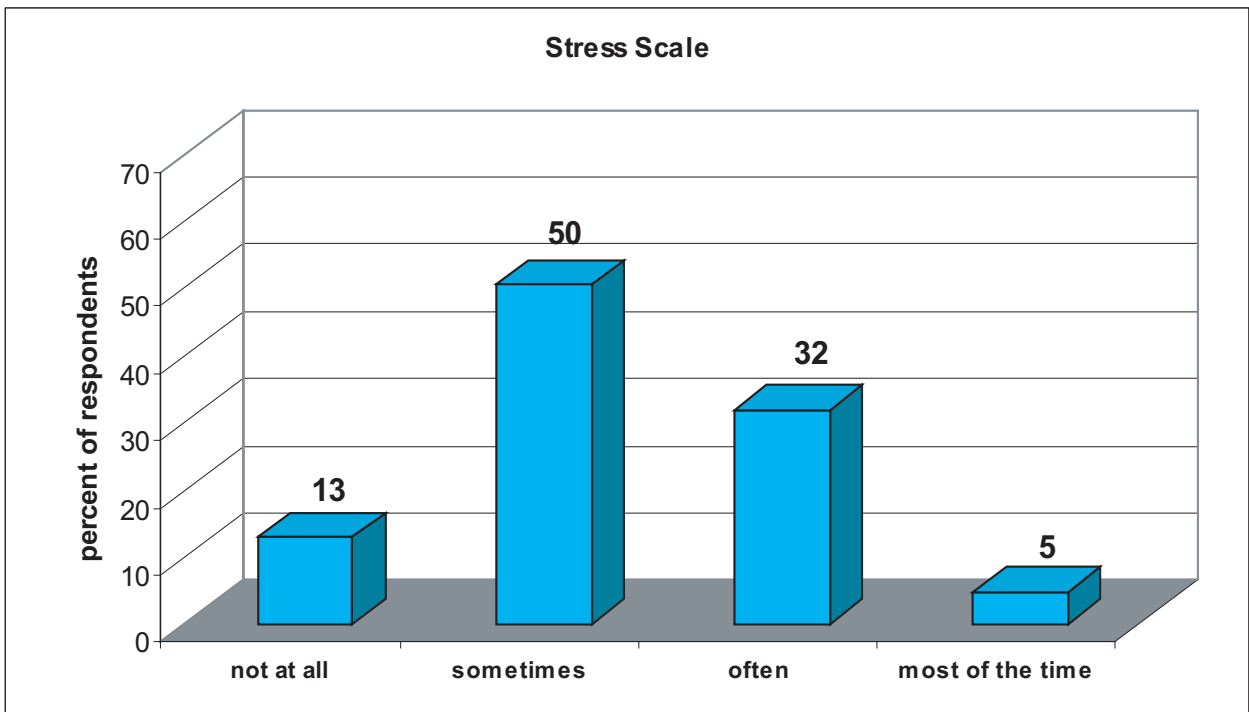| Category	Value
not at all	1
a little bit	40
moderately	40
quite a bit	17
extremely	2
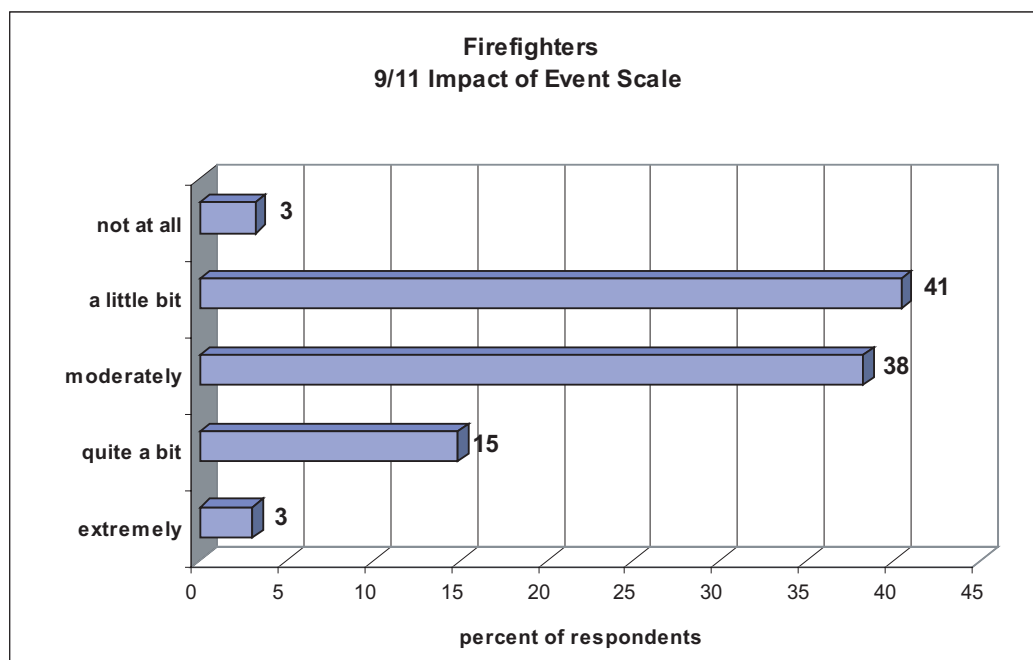
percent of respondents

General Stress:

In addition to the acute stress associated with exposure to traumatic events discussed above, firefighters may also experience more general forms of tension stress. Based on the seven item stress scale of the DASS-21, participants were asked to indicate how often, during the past week, they experienced a number of stress symptoms such as tension, irritability and a tendency to over-react.

Firefighters:

Stress Scale

Category	percent of respondents
not at all	20
sometimes	51
often	24
most of the time	5

Fire Officers:

Stress Scale

We then looked at differences in stress by 9/11 participation—comparing those individuals who were at the WTC on 9/11 or at any time during the month of September, 2001 with those who were not. As can be seen in the figure, those who were on-site are reporting higher levels of stress.
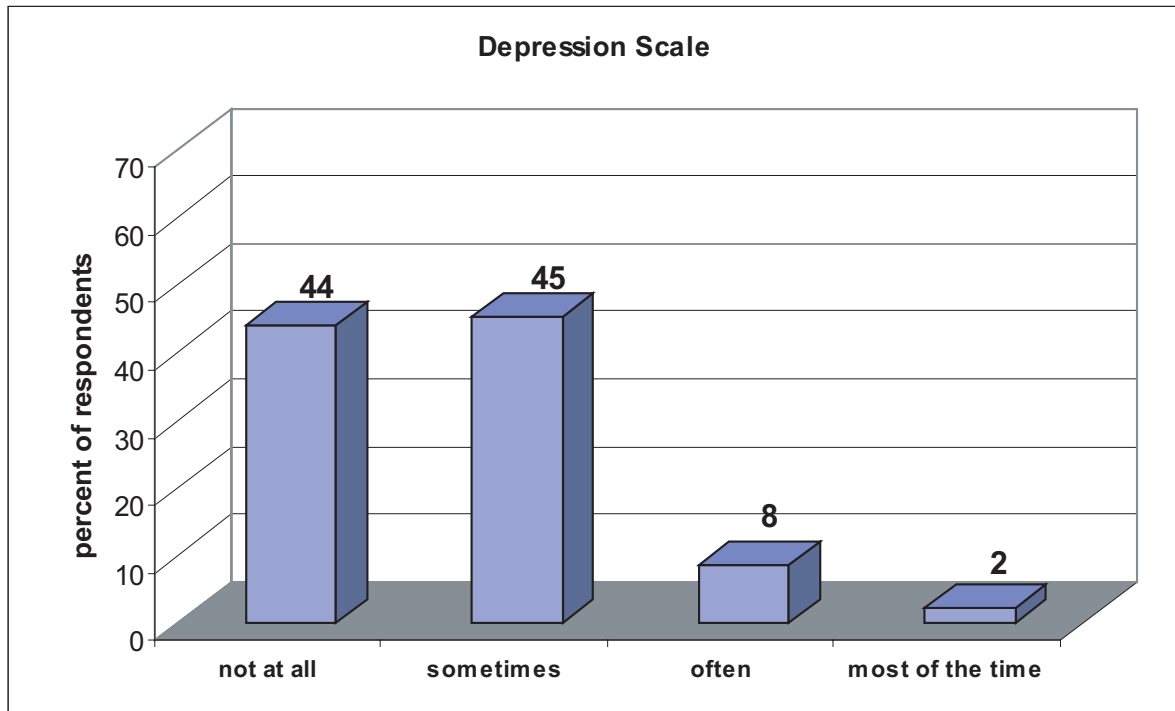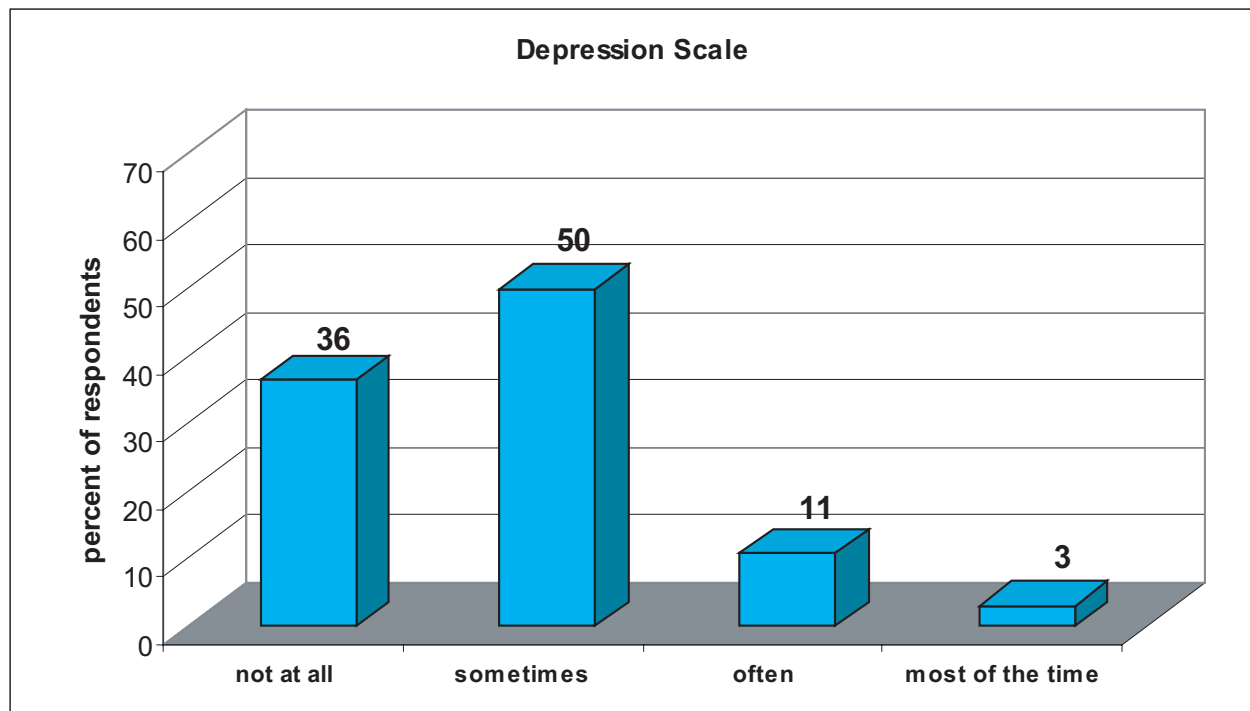
Firefighters:

Stress by 9/11 Participation (at WTC any time during September 2001)
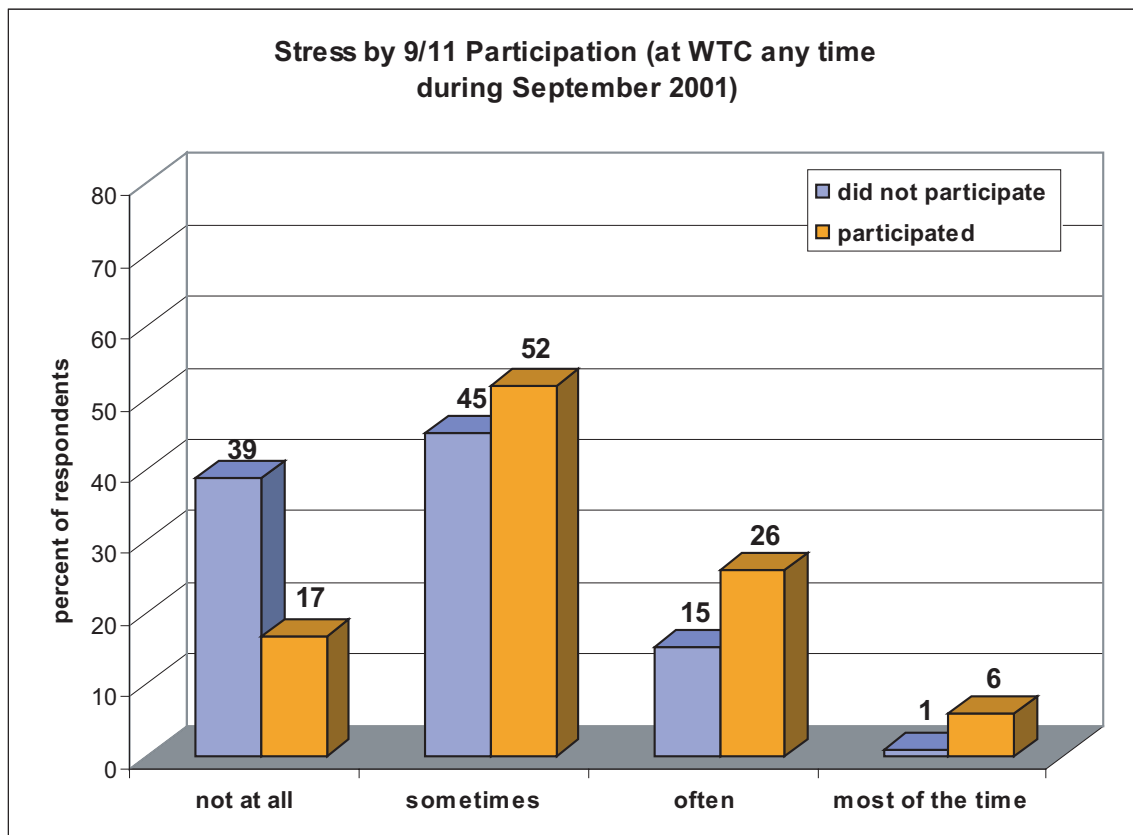
Depression:

Depression is another common emotional health problem that can be associated with exposure to traumatic incidents and stress. Based on the seven-item depression scale of DASS-21, we asked the study participants to indicate how often they experienced of depression during the previous week. Among these symptoms are: (a) feeling down-hearted and blue, (b) finding it difficult to work up the initiative to do things, and (c) feeling that one had nothing to look forward to.
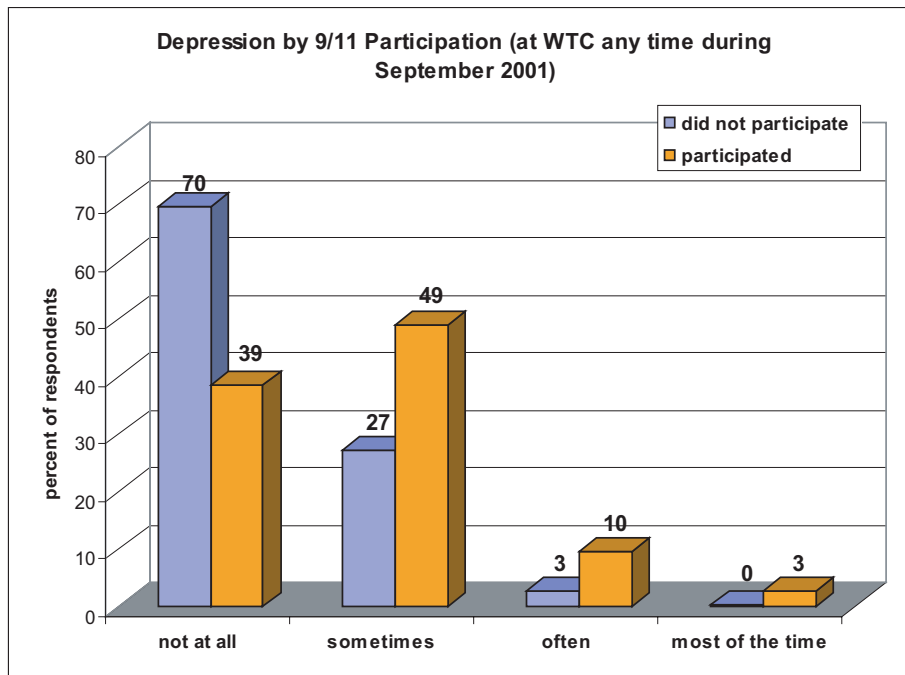
Firefighters:

Fire Officers:

We also looked at depression levels based on participation in 9/11. Firefighters who were at the WTC on 9/11 or at any time during the month of September, 2001 are reporting higher levels of depression.
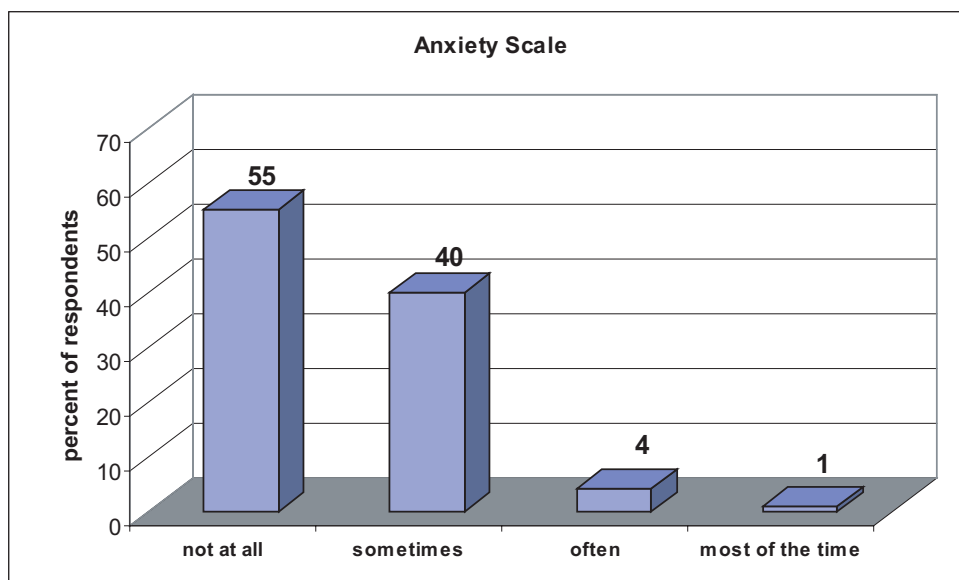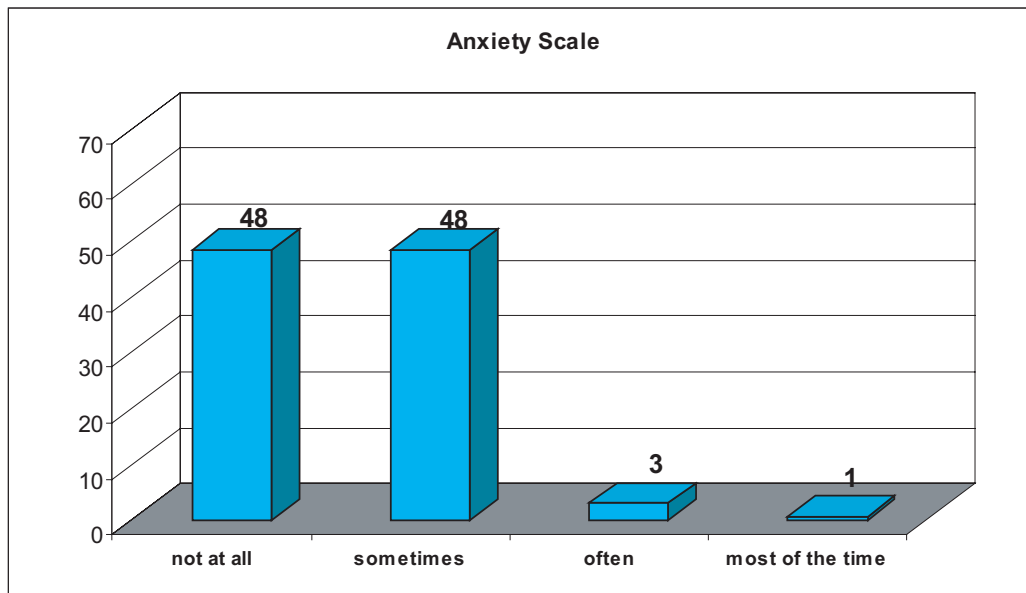
Firefighter:

Depression by 9/11 Participation (at WTC any time during September 2001)

- did not participate
- participated

	not at all	sometimes	often	most of the time
did not participate	70	27	3	0
participated	39	49	10	3

(percent of respondents)

Anxiety:

Anxiety is another common problem that can be associated with traumatic incidents. We asked firefighter participants to respond to a seven-item measure of anxiety, indicating how often over the past week a variety of symptoms associated with anxiety applied to them. Some of these symptoms included: (a) experienced trembling (e.g., in the hands), (b) aware of dryness in the mouth, (c) close to panic.
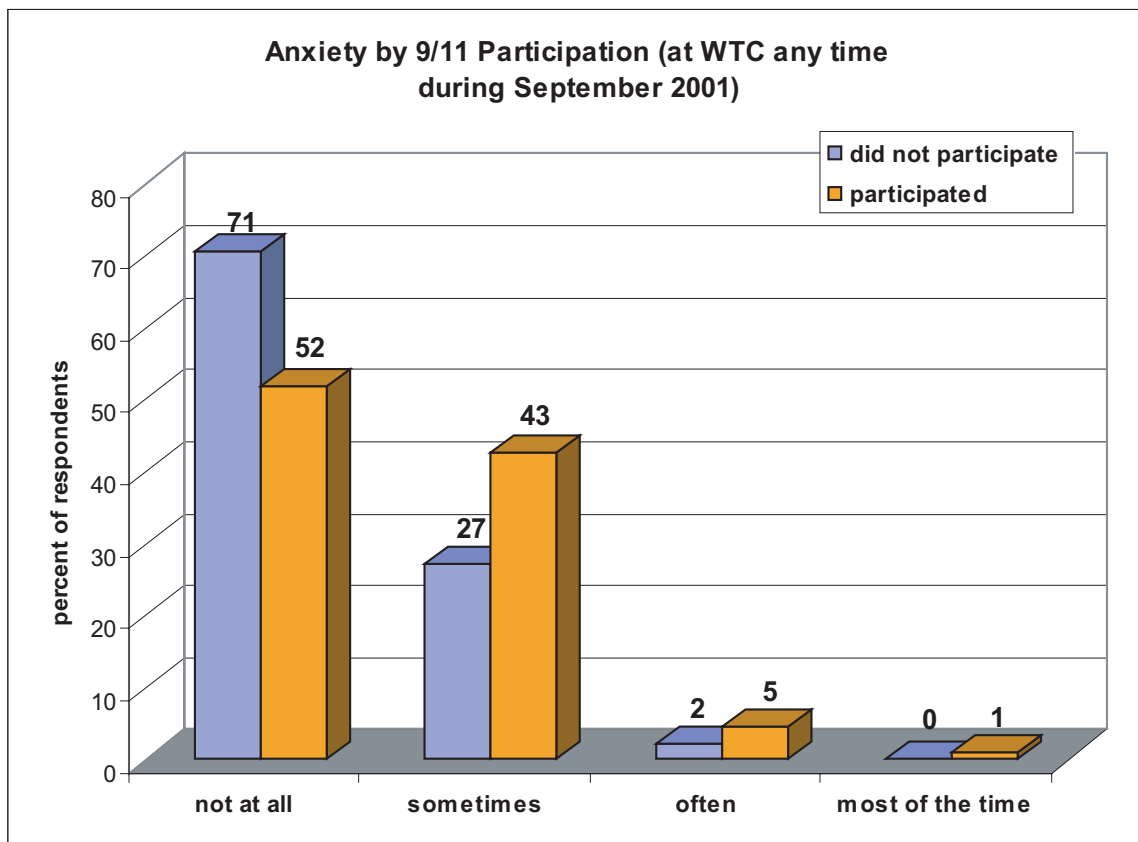
Firefighters:

Anxiety Scale

not at all	sometimes	often	most of the time
55	40	4	1

(percent of respondents)

Fire Officers:

Anxiety Scale

[bar chart showing percentages for the Anxiety Scale categories]

- not at all: 48
- sometimes: 48
- often: 3
- most of the time: 1

(y-axis: 0 to 70)

As with the other emotional health outcomes, firefighters who were at the WTC on 9/11 or during the month of September 2001, tended to report more frequent occurrences of anxiousness than those who were not at the WTC at this time.
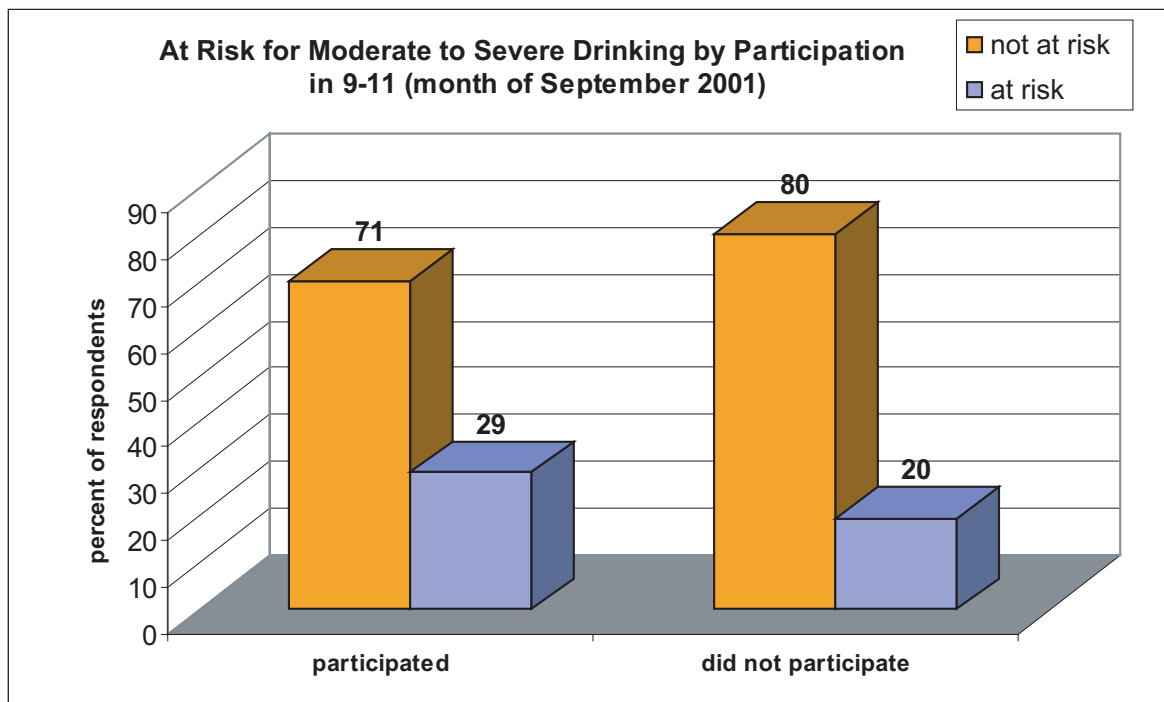
Firefighters:

Anxiety by 9/11 Participation (at WTC any time during September 2001)

[bar chart comparing "did not participate" and "participated"]

- not at all: did not participate 71, participated 52
- sometimes: did not participate 27, participated 43
- often: did not participate 2, participated 5
- most of the time: did not participate 0, participated 1

(y-axis: percent of respondents, 0 to 80)

Drinking Behavior:

Drinking behavior was assessed by the ten-item AUDIT scale developed by the World Health Organization (Babor 1989) and it is used to detect risk for alcohol problems. Our findings indicate:

- 72% of participating firefighters and 74% of participating fire officers are not at risk for an alcohol problem.

- 17 % of participating firefighters and participating officers are at risk for a moderate alcohol problem.

- 11% of participating firefighters and 9% of participating officers are at risk for a severe alcohol problem.

Since its inception in 1970 the National Institute of Alcohol Abuse and Alcoholism has stated that approximately 10% of the American workforce has alcoholism which is consistent with our finding for those at risk for a severe alcohol problem.

Those who are at risk for a moderate alcohol problem could benefit from a workplace education and intervention program. Those who are at risk for a severe alcohol problem could benefit from more intensive forms of intervention and treatment. The firefighters in our survey indicated that they believe helping firefighters with first-time alcohol-related problems is a priority. Specifically, 76% of participating firefighters indicated they believe union resources should be allocated towards helping members with first time alcohol-related charges or arrest, while only 29% believe that union resources should be allocated for helping members with multiple alcohol-related charges or arrest.

Similar to the other emotional health outcomes, those respondents who were at the World Trade Center during the month of September, 2001, are at an increased risk for a moderate or severe alcohol problem.

At Risk for Moderate to Severe Drinking by Participation in 9-11 (month of September 2001)

- not at risk
- at risk

participated: 71 (not at risk), 29 (at risk)
did not participate: 80 (not at risk), 20 (at risk)

y-axis: percent of respondents

Utilization of Health Care Services:

As noted in previous sections of this report, firefighters expect themselves to be efficient problem-solvers in their day-to-day work - no matter what the obstacles they must find ways to get the job done. Also, firefighters tend to seek advice from their peers when they need help. Traditionally, this sense of self-reliance and peer support has guided the ways in which firefighters seek help – either find a solution oneself or seek advice from trusted peers (including their company supervisors). Rarely did firefighters turn to people they didn't know or trust for help. This is reflected in our finding that prior to 9/11:

- Only 14% of the firefighters and 23% of the officers in our sample had sought professional help for a personal or emotional problem prior to 9/11

Remarkably, following 9/11, professional counseling became a far more acceptable and important source of support for firefighters (in addition to the more informal support mechanisms inherent in this occupation), as suggested by our findings that:

- 40% of the firefighters and 46% of the officers in our sample reported that they used counseling services following 9/11. The majority of these individuals sought help from the FDNY Counseling Unit (51% firefighters and 56% officers) or a therapist in the firehouse (28% firefighters and 50% officers).

- Approximately half of those respondents (51% firefighters and 49% officers) who used these services reported a high level of satisfaction with the help they received.
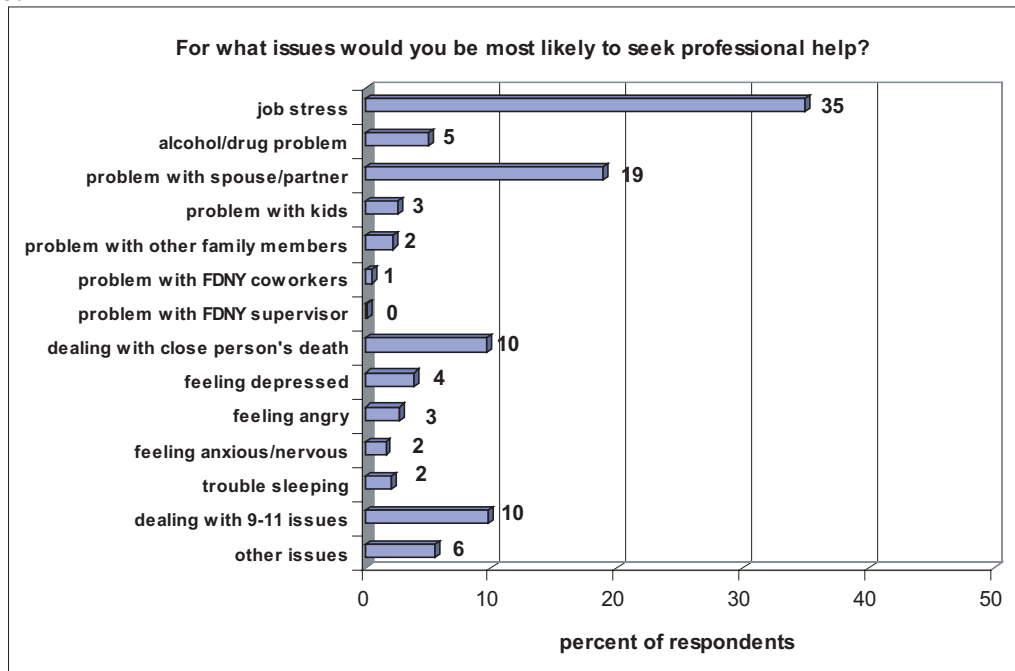
Furthermore, when asked to whom they would turn if they needed professional help with a *current* problem:

- Approximately one third of the respondents (30% of firefighter and 35% of officers) indicated they would go the FDNY Counseling Unit/Medical Office

- Approximately one third (32% of firefighter and 35% of officer respondents) indicated they would prefer to see a private counselor outside the FDNY.

- The remaining respondents indicated that they would seek help from other sources including the union, peers at work, personal physicians, clergy, and friends.
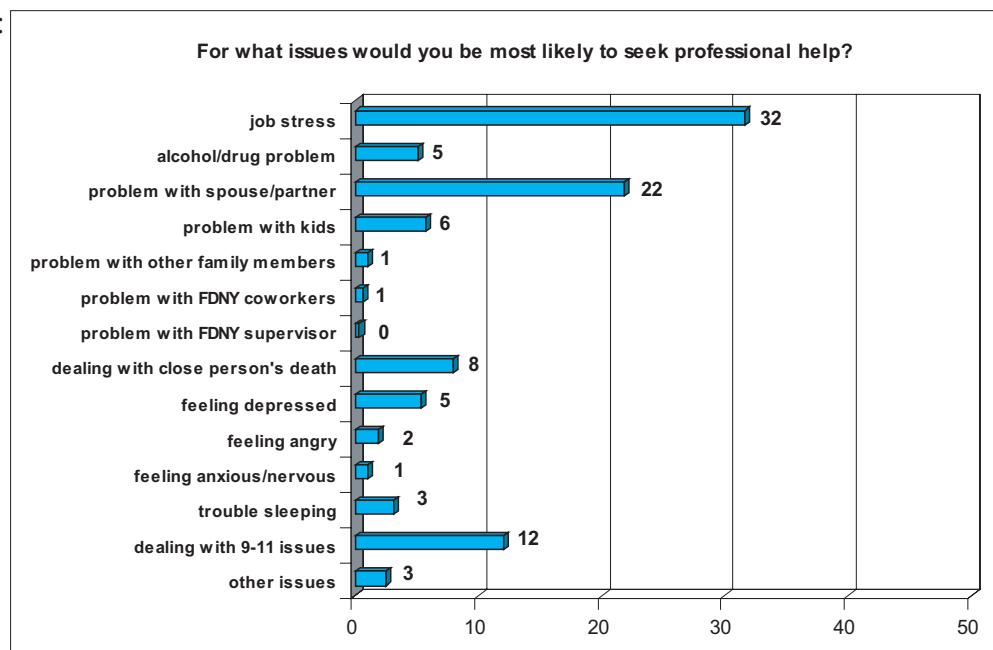
Clearly, these findings suggest that in addition to the informal support mechanisms that have always been a part of the FDNY, since 9/11, there has been an increase in firefighters' willingness to use more formal sources of support (i.e. professional counselors) both within and outside of the Department.

Finally, we asked firefighters to indicate what issues they would be most likely to seek professional help for. As can be seen in the figures below, job stress, problems with spouse/partner, dealing with the death of someone you care about and dealing with 9-11 related issues are the most prominent concerns of firefighters and officers.

Firefighters:

For what issues would you be most likely to seek professional help?

Issue	Percent
job stress	35
alcohol/drug problem	5
problem with spouse/partner	19
problem with kids	3
problem with other family members	2
problem with FDNY coworkers	1
problem with FDNY supervisor	0
dealing with close person's death	10
feeling depressed	4
feeling angry	3
feeling anxious/nervous	2
trouble sleeping	2
dealing with 9-11 issues	10
other issues	6

percent of respondents

Fire Officers:

For what issues would you be most likely to seek professional help?

Issue	Percent
job stress	32
alcohol/drug problem	5
problem with spouse/partner	22
problem with kids	6
problem with other family members	1
problem with FDNY coworkers	1
problem with FDNY supervisor	0
dealing with close person's death	8
feeling depressed	5
feeling angry	2
feeling anxious/nervous	1
trouble sleeping	3
dealing with 9-11 issues	12
other issues	3

Interestingly, only 5% of firefighters and officers indicated that they would seek professional help for an alcohol or drug problem. This is a surprisingly low number given our findings that 17% of firefighters are at risk for a moderate alcohol problem and approximately 11% are at risk for a severe alcohol problem. Firefighters, like many other workers, may be reluctant to share their alcohol or drug problems with their employers due to the fear of losing their jobs and the stigma often associated with such problems. This suggests that enhanced education as well as improved mechanisms for motivating firefighters to seek help for alcohol problems may need to be implemented in the FDNY. Given the high levels of social support and trust that exist within firefighting teams, a strong peer-based education and intervention program may be appropriate. (Bacharach, S., Bamberger, P., & Sonnenstuhl, W., 1994)
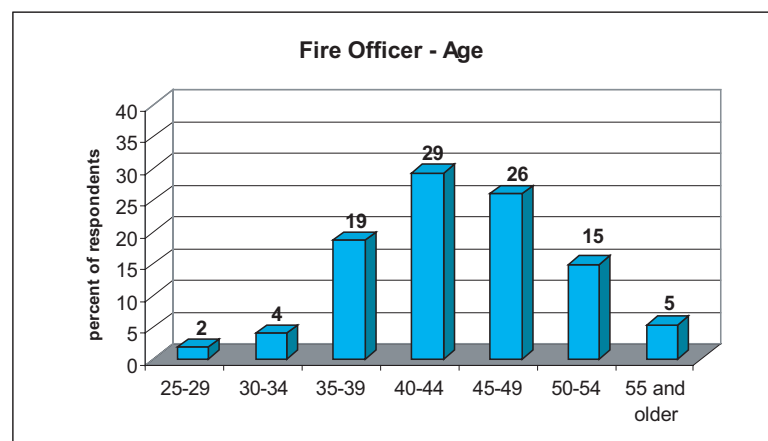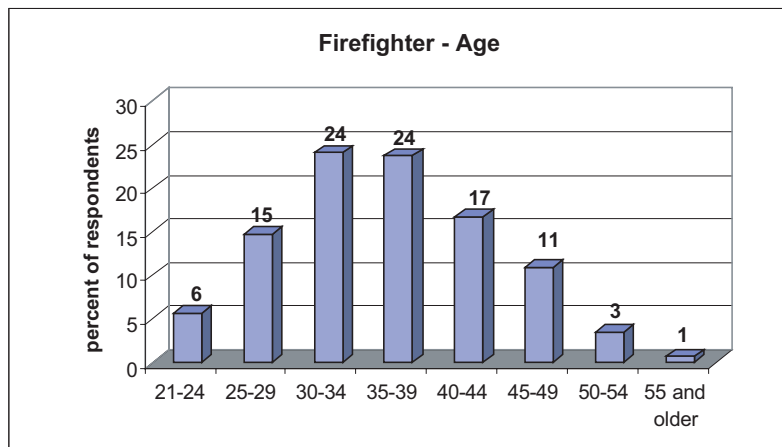
Conclusion

This report has examined the working conditions and emotional health of New York City's firefighters and officers. As reflected in the data, firefighters and officers work in a high-risk environment, where they are frequently injured and regularly exposed to numerous on-the-job hazards and traumatizing incidents. Given this high risk environment, it is not surprising that firefighters experience symptoms of traumatic stress, general tension stress, depression, and anxiety and are at risk for developing alcohol problems. Likewise, as the data illustrate, the tragic 9/11 attacks on the World Trade Center put firefighters and officers, especially those who were on the site of the disaster during the month of September, at an increased risk of developing emotional health problems.

Also highlighted in the report is a unique strength of FDNY firefighters and officers: they work in highly supportive self-managed teams, which enable them to operate as highly effective work units in fighting fires and confronting other emergencies. These self-managing teams are also uniquely situated to help firefighters and officers more effectively cope with their emotional health problems. Many individuals already ask one another for advice about a wide range of concerns, and they often are encouraged to seek assistance from FDNYs counseling program. Yet, our data suggest these unique relationships are under utilized by firefighters and officers. Within this context, one recommendation is to build on this unique strength in order to develop innovative supervisory and co-worker mechanisms for ensuring that those with emotional health problems receive the help they need, either from the Department's counseling program or other health care providers.
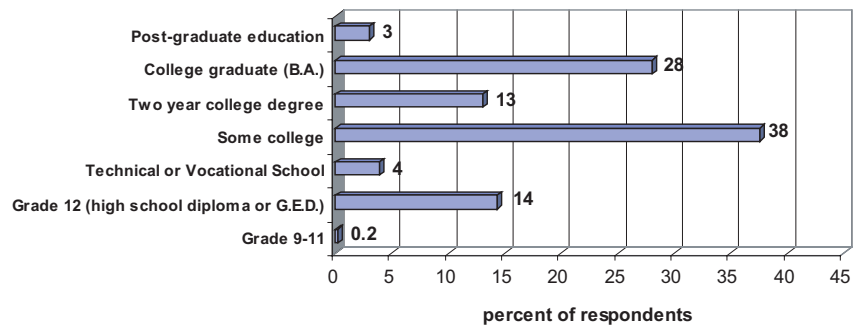
In the report, we have tried to let the firefighters and officers speak for themselves through our data. In that context, they have raised a number of important concerns, including the degree to which they have input into work-related decisions, the fairness of policies and procedures regarding medical leave and discipline, the Department's safety-related attitudes and practices, and training and equipment adequacy. While the report reflects these concerns about working conditions and their relationship to firefighters' and officers' emotional health, all can be dealt with through cooperative labor-management efforts. It is our hope that, in sharing this report with both labor and management, we are contributing to such cooperative action.
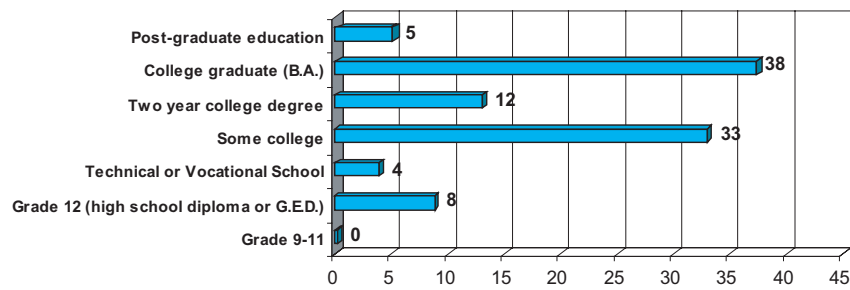
Appendix

The findings presented above are based on a study of New York City firefighters and officers. In total, out of a target sample of some 3,600 firefighters and officers, we collected data from 1653 firefighters and 379 officers for a response rate of over 50%. Data were collected during the summer and fall of 2003. The target sample represents one third of all NYC firefighters and officers. Rather than identifying a random sample of firefighters, we drew a stratified, random sample of 144 fire companies (out of approximately 400 FDNY companies) and targeted all of the members of these companies (typically between 20-25 firefighters and 4 officers per company) for data collection. Stratification was based on the relative work intensity of each company (i.e., average daily runs). We used the FDNY's three-category system by which to differentiate between more and less active firehouses, randomly sampling an equal number of the firehouses from each of these three categories (i.e., 48 from highly active, 48 from moderately active and 48 from relatively inactive) for inclusion in the study. As might be expected in this highly male-dominated workforce, 99% of those included in our sample were men. The following figures provide other, basic sample characteristics:
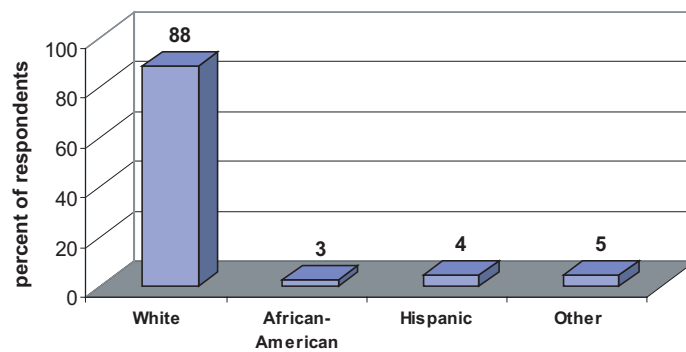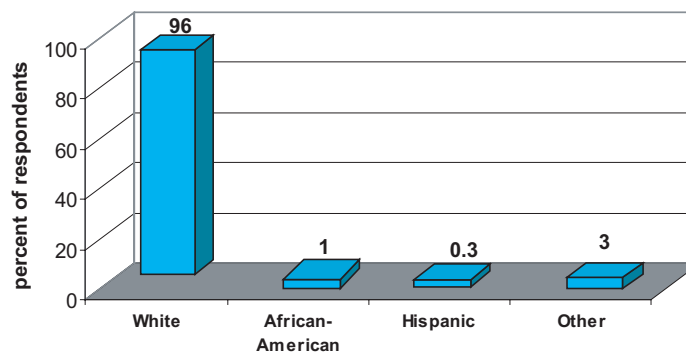
Firefighter - Education

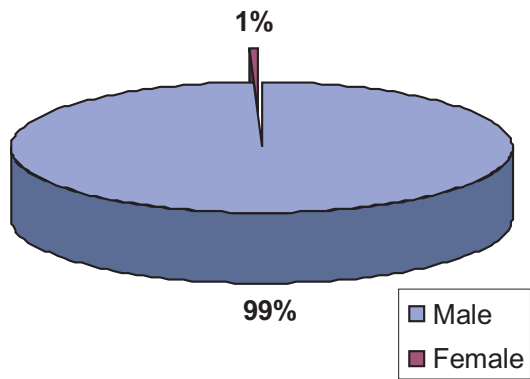| Education Level	percent of respondents
Post-graduate education	3
College graduate (B.A.)	28
Two year college degree	13
Some college	38
Technical or Vocational School	4
Grade 12 (high school diploma or G.E.D.)	14
Grade 9-11	0.2

Fire Officer - Education

Education Level	percent of respondents
Post-graduate education	5
College graduate (B.A.)	38
Two year college degree	12
Some college	33
Technical or Vocational School	4
Grade 12 (high school diploma or G.E.D.)	8
Grade 9-11	0

Firefighter - Ethnicity

Ethnicity	percent of respondents
White	88
African-American	3
Hispanic	4
Other	5

Fire Officer - Ethnicity

Ethnicity	percent of respondents
White	96
African-American	1
Hispanic	0.3
Other	3

Firefighter - Gender

1%

99%

Male
Female

Fire Officer - Gender

1%

99%

Male
Female

Firefighter - Marital Status

| | |
percent of respondents

70
60
50
40
30
20
10
0

28.0 63.7 0.4 1.6 3.3 3.1

Single Married Widowed Seperated Divorced Living with a partner
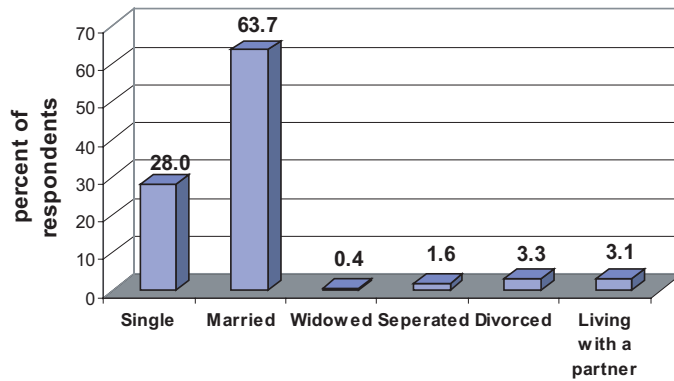
Fire Officer - Marital Status

percent of respondents

100
90
80
70
60
50
40
30
20
10
0

4.0 87.3 0.5 1.6 5.0 1.6

Single Married Widowed Seperated Divorced Living with a partner
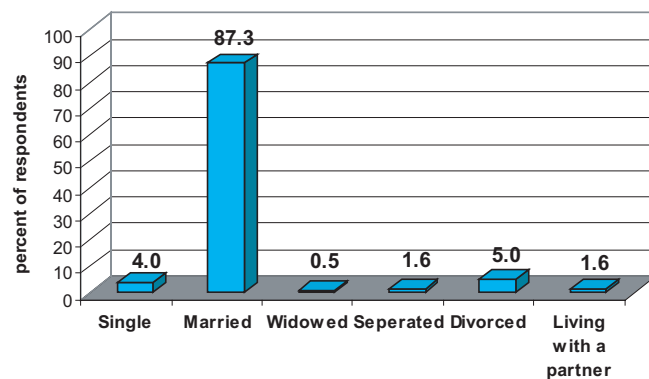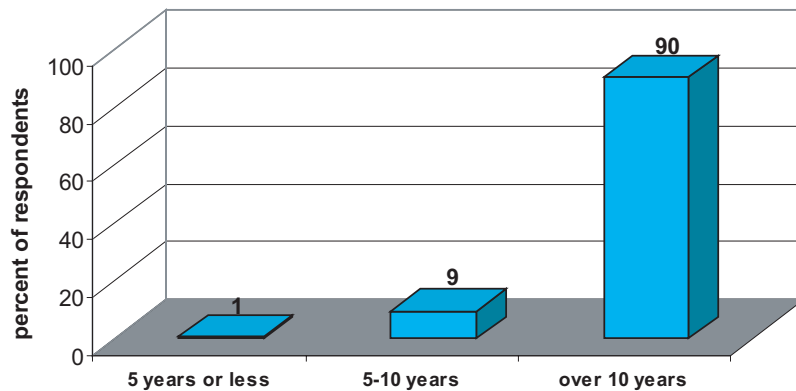
Firefighter - Years of Service
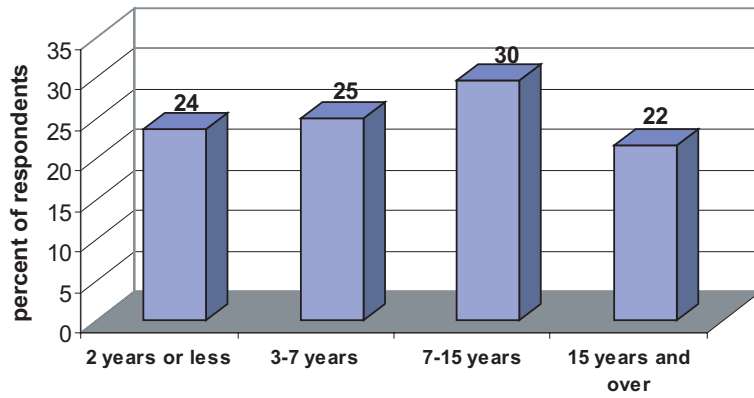
Years of Service as an Officer in FDNY
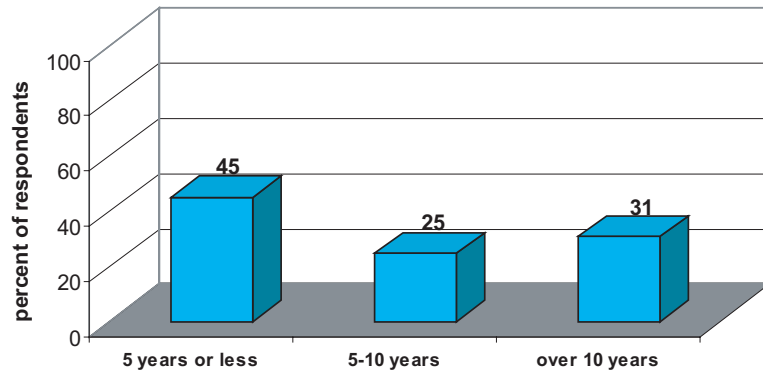
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