

# Karoshi and Karou-jisatsu in Japan: causes, statistics and prevention mechanisms

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## ABSTRACT

*It has been long known that Japan has a penchant for work and loyalty. While hard work and loyalty are generally a positive trait, there is a fine line between productivity and overwork which results in negative side effects and health issues, often leaning to premature death or suicide. This effect has been known in Japan as “karoshi”, a word meaning death due to overwork; or in the case of suicide due to overwork, “karo-jisatsu”. This paper aims to explore the surrounding causes, background, current data and prevention mechanisms that afflict Japan and its culture of “salary-man sudden death syndrome”.*

**Keywords:** karoshi, karo-jisatsu, syndrome

## BACKGROUND

Japan has a long history of loyalty and servitude stemming from its pre-war days and Code of Bushido, where “citizens lived in circumstances bordering on poverty” (Herbig & Palumbo, 1994). During these times, daily necessities were in short, with only the basics to live being in supply. The mentality of this time was to “self-sacrifice for the country” (Herbig & Palumbo, 1994) in an expression of loyalty, so the country could move forward in their endeavors. This generation was known as the “have” generation and their traits of loyalty and self-sacrifice were transferred forward to the ensuing generation.

The post-war generation known as the “do” generation, appeared when the first baby-boom phenomenon “reached maturity in the height of Japan’s economic growth in the 1960’s” (Herbig & Palumbo, 1994) and readily applied their previous generations way of thinking to the business world. The “do” generation differed greatly from the “have” generation in the fact that all their basic needs were met with abundance, and instead of a desire to serve their country, their aim was to serve their company through loyalty and hard work, with an interest in self-advancement. The new mentality was “those who work long hours are positively rewarded” (Herbig & Palumbo, 1994). This generation was also dubbed as the “workaholic” generation, and was the first to suffer from karoshi and karo-jisatsu.

Karoshi is loosely defined as death due to overwork, or more specifically the “fatal condition in which the living rhythm of a human being is collapsed due to excessive fatigue

and the life maintenance function is ruined” as defined by the Council for Karoshi Victims in 1989. The major medical causes of death due to karoshi are “heart attack and stroke due to stress” (Der-Shin, 2012) attributed to [1] long working hours and [2] stress. For karo-jisatsu, death is a combination of physical and psychological ailments such as failure to meet employer’s expectations, increase in job responsibility or work related to psychological stress which result in suicide due to overwork.

The term karoshi first appeared around the early 1970’s and stems from the word “kacho-byo” which literally translates to bosses-disease. Kacho-byo was meant to define the “psychological and moral ailment of middle managers resulting from stress, worry about promotion, fate, making it or not” (Herbig & Palumbo, 1994) coupled with little rest that ailed Japanese management. The first case of karoshi was reported in 1969 of a 29-year-old male who suddenly died in a shipping department of a major Japanese newspaper company. Japan has been reluctant to address karoshi and it was not until the late 1980’s when “several business executives who were in the prime of their years suddenly died without any previous signs of illness” (Der-Shin, 2012). This finally attracted media attention to the issue with the government dragging its feet to address the issue and only finally beginning to publish data on karoshi in 1987.

Outside pressure on the government to address karoshi and karo-jisatsu have been mounting over the decades. The Ministry of Health, Labor and Welfare (MHLW) have only recently defined karoshi as “sudden death of any employee who works an average of 65 hours per week or more for more than 4 weeks or on average of 60 hours or more per week for more than 8 weeks” (Hiyama & Yoshihara). The government’s reluctance to address karoshi and karo-jisatsu cannot be pinned to one problem, but rather to a eulogy of problems such as the reluctance to pay out workers compensation or benefits, disturb the economy or business culture, international image and fear of mass compensation claims.

**Table 1.** *Major medical causes of death and symptoms in karoshi*

Table 1. Major medical causes of death and symptoms and signs in karoshi	
Major medical causes of death (%) <sup>(13)</sup>	SAH*(18.4%) Cerebral hemorrhage (17.2%) Cerebral infarction (6.8%) Myocardial infarction (9.8%) Heart failure (18.7%) Other causes (29.1%)
Pre-event condition <sup>(18)</sup>	Common symptoms and signs
Burnout symptoms	Easy fatigue, forgetful, tight neck and shoulder, headache, myalgia, chest tightness, body weight change.
Depression	Poor concentration, feels blue easily, insomnia, suicide idea or attempt
*SAH : subarachnoid hemorrhage	

**Source:** Overwork, Stroke and Karoshi-death from Overwork (Der-Shin, 2012)

Medically speaking, death by karoshi can be attributed to several symptoms, most notably, acute heart failure and subarachnoid hemorrhage. This can be seen in Table 1 below, as well as symptoms of burnout and depression. Karoshi is said to be a silent killer with little to no symptoms being present before death. Workers may present no obvious symptoms or signs of heart or brain problems but can be visibly present with depression or burn-out syndrome (Der-Shin, 2012) such as stiffness of joints and neck, frequent

headaches, changes in weight, lack of concentration, insomnia, fatigue or chronic depression.

Karoshi strikes victims in the prime of their working years and in every occupation, although the “white-collar salary-man is most susceptible” (Herbig & Palumbo, 1994). It has been noted that since the economic bubble burst, Japan has tried to increase productivity by increasing working hours rather than hiring new employees that further afflict the white-collar workplaces.

### CAUSES

The symptoms building-up to karoshi and karo-jisatsu are not without cause. Two major causes of stress and long working hours can be credited to both cultural and psychological factors.

#### Cultural factors

Culture factors play a major role in the prevalence of stress and long working hours leading to karoshi and karo-jisatsu in Japan. As mentioned above, Japan’s culture has evolved around loyalty and servitude to the country, which was later, translated to loyalty and servitude to the workplace. In Japan, “loyalty to the organization is often measured by the time spent at one’s desk” (Herbig & Palumbo, 1994). This loyalty is often seen as the reluctance to go home until their boss goes home – and their boss is typically unwilling to go home until his boss goes home. This leads workers to “stay on until 10:00 or 11:00pm or later merely to impress the boss or the few who actually work” (Herbig & Palumbo, 1994). During this time productivity is low, with workers often doing menial or unrelated tasks to look busy in the eyes of the boss and fellow co-workers. If a worker has the notion of leaving early, they risk losing credibility in the eyes of their peers and managers. More often than not, this unpaid overtime is expected as an “expression of dedication to their companies and a criterion for promotion” (Herbig & Palumbo, 1994).

Another cultural factor is the unpaid extracurricular activities or “service overtime” that are, more often than not, required of workers. These extracurricular activities include entertaining customers, rounds of golf with bosses, karaoke, nomihodai, etc., which are “expected of conscientious employees which adds considerably to the official work hours” (Herbig & Palumbo, 1994). These activities typically take place outside the workplace and work hours resulting in little rest and down time for workers.

The social culture of family and masculinity in Japan are of no help to the salary-man either. In Japan, it is expected that the man of the family should be the breadwinner thus “the company is one’s first priority; social, peer and family pressures abound; anything different will be shunned by peers” (Herbig & Palumbo, 1994). Deviation from this is seen as callous where it is the women’s job to raise the children and take care of the home. In principle, the workaholic culture is endorsed by the family and seen as a given duty. In short, the life-style and culture of a typical salary-man in Japan can be captured in this simple quote:

*“[The salary-man] is typically involved neither in the education nor the upbringing of his children, who are virtually unknown to him. He holds his wife responsible for their children’s success or failure. He toils six days a week with only Sundays off; even then a round of company golf may be dictated. He suffers through Sundays, eyes bleated from rounds of corporate drinking the night before. Often he spends all of Sunday*

*sprawled out on the tatami, dead tired, attempting to recover from a week's work and readying himself for another week" (Herbig & Palumbo, 1994).*

Vacation or down time is quite taboo among salary-men as well. With a culture pointed to loyalty and the display of it, companies often let their employees know that "vacations are not welcome" (Herbig & Palumbo, 1994). A study performed around 1994 by the Japan Federation of Employers' Association, found that 15 percent of companies do not favorably look upon vacation time and less than 30 percent of workers observe all three holidays; New Year's holiday, Golden Week and a week rest in summer. Although workers are permitted to two weeks paid leave during summer, hardly any workers take the full time "because of fanatical company loyalty, most take only two or three days if that many" (Herbig & Palumbo, 1994).

With little down time, a work environment based on "desk time" and a culture which endorses it, it is the Japanese who bring upon themselves this culture of long work hours and stress which lead to physical and mental health issues resulting in karoshi, depression and burnout which lead to karo-jisatsu.

### **Psychological Factors**

The Japanese are a very self-conscious people, often extremely conscious of what other people think. A typical saying in Japan is "the nail that sticks up gets hammered down", implying someone "out of line" will be forced to return to the status quo of the society. This applies for the salary-man as well. In a highly culturally appointed society, where everyone is expected to work hard, the "salary-man often thinks he too must work hard or else he will feel guilty" (Herbig & Palumbo, 1994). This notion leads to overwork and stress but moreover, psychological side effects where the salary-man feels it is their duty to fit in and perform to expectations. This mentality makes it hard for workers to stop, say "no" or confronts their bosses when faced with excessive overtime, or the need to take time off.

In numerous cases, companies which are built upon traditional Japanese values are very concerned with order, structure and power. This notion originates from the Code of Bushido where the "Japanese believe they are creating conditions for happiness and making a moral person happy by allowing him to work hard" (Herbig & Palumbo, 1994). Work is considered almost a religious experience where peer pressure to conform to these rigorous and culture expectations of the job are expected. To deviate is considered disloyal and to question otherwise is considered morally unsound. Rather it is "what one does if one is a respected member of the community, regardless of whether or not anything productive is accomplished" (Herbig & Palumbo, 1994). To push workers to psychologically implement unhealthy practices can only lead to depression and burnout – two major causes of karo-jisatsu.

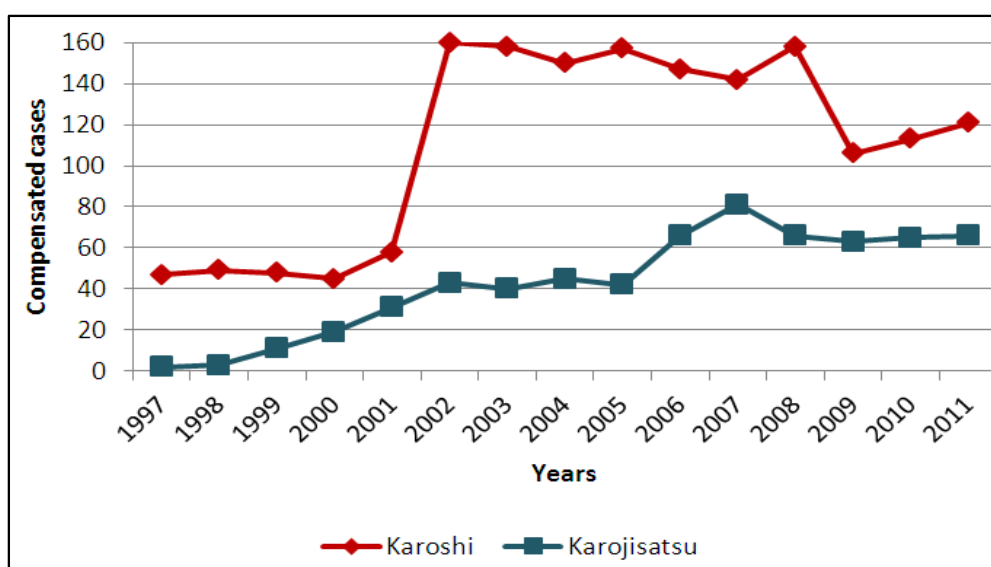
### **KAROSHI CASES AND GOVERNMENT IDENTIFICATION OF KAROSHI**

Death by overwork (Karoshi) in Japan has recently increased. Based on the Ministry of Labor data, work-related suicides have risen to 45% in past four years (2011 to 2014) among those who were 29 years old and younger – additionally among women, increasing up to 39%.

Due to the shrinking population in Japan, the labor demand has increased to the highest levels since 1991, with 1.28 jobs per applicant. Some businesses are simply

squeezing more out of their employees, which occasionally ends with tragic consequences. At the same time, based on the Ministry of Labor data, claims for compensation for Karoshi rose to a record of 1,456 cases in March 2015.

According to Hiroshi Kawahito, the secretary-general of the National Defense Counsel for Victims of Karoshi who has been dealing with cases since the 1980s, believes that the true figures could be 10 times higher than official records. He believes that the government is reluctant to recognize such cases. He further added that the governments hosts a lot of symposiums and makes posters about this issue but this is propaganda. Kawahito claims that the real problem is reducing working hours and government is not doing enough. On other hand, according to the Ministry of Labor, the number of compensation claims related to death from overwork, or Karoshi, has risen. Figure 1 below shows the number of compensated cases for Karoshi and Karo-jisatsu that were compensated by the Ministry of Labor.



**Figure 1.** Number of compensated cases (Karoshi and Karojisatsu).

Source: Ministry of Labor <http://www.mhlw.go.jp/english/>

In November 2014, the Tokyo District Court ordered a restaurant chain operator to pay 57.9 million yen in damages to the family of a former manager of one of its outlets in Tokyo, who hanged himself in 2010. According to the Japan Times, the 24 years old manager had worked an average of more than 190 hours overtime monthly, in last seven months prior to his death. At the same time, the Kumamoto District Court ordered a local bank to pay 130 million yen in compensation to the family of 40 year old employee who committed suicide after suffering from depression that the court determined had been induced from overwork.

Japan has no legal “limits” on working hours, but the Ministry of Labor recognizes two types of Karoshi: death form cardiovascular illness linked to overwork and suicide due work related mental stress. A cardiovascular death is likely to be considered as Karoshi if an employee works 100 hours of overtime in the month before the death, or 80 hours of overtime work in two or more consecutive months. In addition, a suicide is considered as Karoshi if an employee works 160 hours or more of overtime in one month or more than 100 hours of overtime for three consecutive months.

According to the former “Standards on Recognition” of Labor accidents (Labor Standard Bureau Notification No. 38 and No. 30) issued in 1995 and 1996 respectively, excessive work during very short period of time before the disease onset (the previous day or within a week) was accepted as a direct cause of cerebrovascular disease, ischemic heart malfunction and arrhythmias (Araki, & Iwasaki, 2005).

In contrast, based on the result of epidemiology research conducted later, the Expert Study Committee on Standard Recognizing Brain and Heart Diseases of the MHLW reached a new conclusion this time, that overwork carried out over a long period of time, from one to six months prior the onset of the disease, could be deemed as the principal cause of ailment. Furthermore, based on this new accession, excessive working hours were introduced as an indicator of accumulated fatigue, thus, enabling clear and prompt judgment of the extend of overwork when certifying labor accidents (Araki, S., & Iwasaki, K. 2005).

Every year in Japan, thousands of workers are dying from overwork. According to a U.K news agency, Kiyotaka Serizawa was one of them. In July 2015, Serizawa killed himself after working 90 hours per week in a company that provided residential building maintenance. His father, Kiyoshi Serizawa, said in an interview at their family home: "They said they'd never seen anyone who didn't even own the company work so hard". In 2015, the MHLW classified 189 deaths as Karoshi, which were either from a fatal heart attack or stroke, or a suicide triggered by overwork.

According to the International Labor Organization (ILO), karoshi stems from overwork and the buildup of work-related stress which manifest itself through following forms (International Labor Organization, 2013):

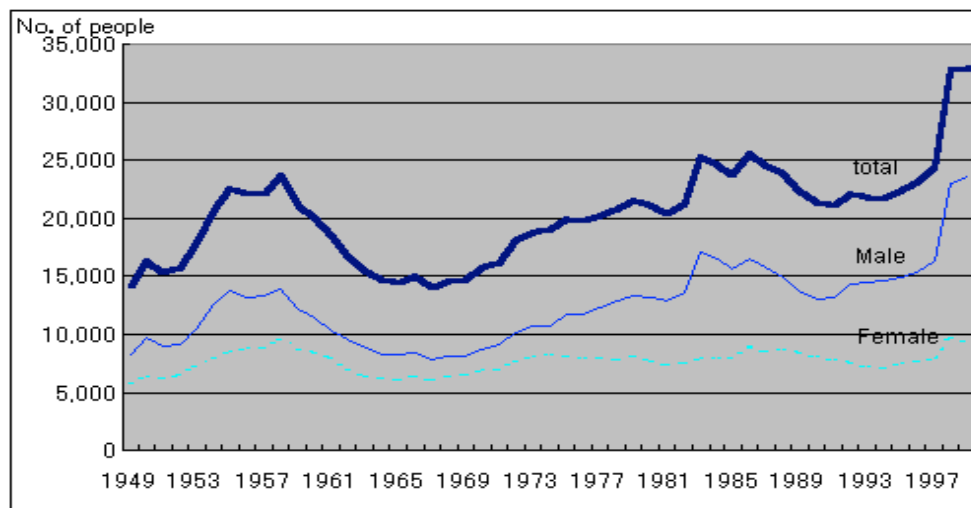
1. Excessive hours at the workplace. Especially seen in workers who perform all-nighters, late night or holiday work, outside their normal hours of operation. This results directly from the long-term economic recession after the collapse of the bubble economy in in the 1980's and 1990's. During this period, firms reduced staff while maintaining workloads to meet ever-tightening budgets, requiring staff to work harder and longer.
2. Not being able to meet company goals or objectives plays a direct effect on the stress level of workers. This accumulated stress of frustration from not being able to meet company expectations vastly increases psychological burdens placed on employees.
3. The culture of lifetime employment places workers at odds with ever-shrinking shoe string budgets that result cutbacks. Loyal employees who gave the company years of service were forced to resign, or were bullied into resignation causing deep psychological stress and damage.
4. Middle management was caught in the crosshairs of protecting their staff and corporate restructuring. This resulted in emotional distress of having to bear the responsibility of targeting workers for layoffs, as well as bearing the brunt of the protests against the new corporate restructure. Many of these karoshi cases resulted in karo-jisatsu.

#### **GOVERNMENT POLICY AND LABOR STANDARDS**

Japan's long work hours generate both high human and economic costs. Even between 2002 and 2008, when Japan enjoyed a growing economy, the media regularly reported

cases of workers who suffered from strokes and heart attacks or were driven to depression or suicide by unrelenting job demands. Work hours are a major impediment to equal opportunity, since working mothers cannot devote the long hours expected of professional employees and so must opt for low-paying, low-status jobs (Scott, 2009/2010). Family life is affected because many younger individuals postpone or abandon hopes of marriage and children as they sacrifice their personal lives to stay employed. Furthermore, while long work hours and overwork are common in many countries, notably the US and Britain, only in Japan has *karoshi* been officially recognized as a medico-legal phenomenon for the past two decades, and only [Japan] has spawned a social movement to combat it (North, 1999).

Japan's employers and conservative policymakers have long held that the country's pattern of incremental and consensual policy making is effective in improving employment conditions, while avoiding the economic rigidities of western nations. The result since the 1950's has been labor legislation that consistently lags behind labor market trends, or seeks merely to defuse complaints from trade partners that poor labor standards constitute unfair trade practices (Manabu). Work-hour-related policy making closely matches this pattern: long work hours have provoked consistent attempts at reform since the late 1960s, and reformers made several significant revisions to labor laws between 1987 and 1993, but failed to significantly affect actual practice. While many large manufacturing firms did reduce working hours around this time, they were reacting not to legislation, but rather to labor shortages and economic stagnation (Foote, 1997). Some official statistics, along with numerous reports of uncompensated overtime, suggest that work hours lengthened over the past decade, despite a record-long six-year economic expansion that should have generated pressure for improving work conditions. Workplace stress-related illnesses and deaths are at record high levels (Kenji Iwasaki & nakata, 2006). Below Figure 2, shows the trend in suicide death in Post war Japan (Period: 1949 – 1999).



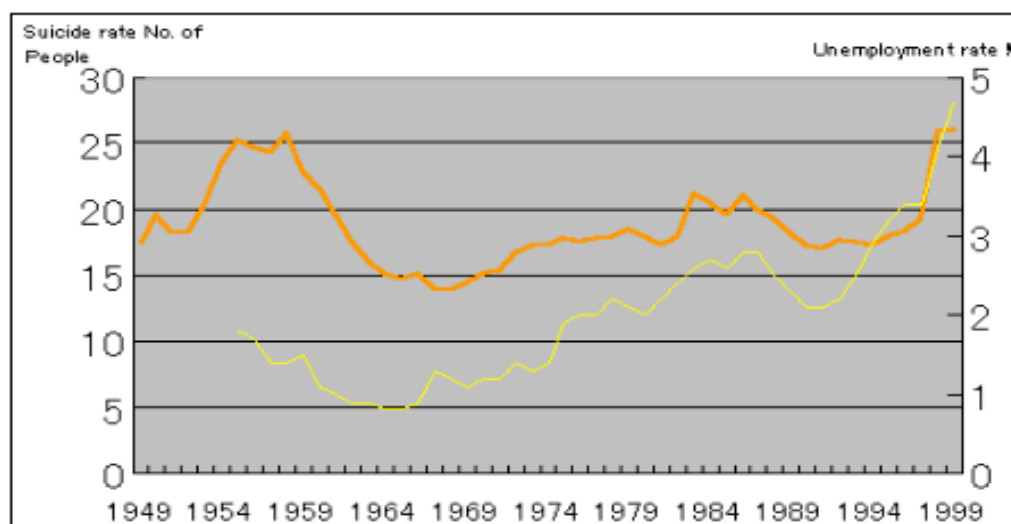
**Figure 2.** *Trend in suicide death in Post war Japan (1947-99).*

Source: 'Number of suicide' in 'Outline of suicide' by the national police agency;  
<http://karoshi.jp/english/overwork2.html>

Figure 3 below shows trends in suicide and unemployment rate from 1949 to 1999. The suicide rate is displayed as the number of suicides per 100,000 people. This suicide rate calculation based on data from the National Police Agency and the Statistics Bureau of

the Management and Coordination Agency ('population estimate as of October 1 every year') for year from 1949 to 1999.

The unemployment rate (ratio of wholly unemployed) was provided from the data from the Japanese Statistics Bureau of the Management and Coordination Agency ('statistics on labour force review' 1955 – 1999).



**Figure 3.** Trends in suicide rate and unemployment rate (1949-99).

Source: <http://karoshi.jp/english/overwork2.html>

### **Japan Plans Action to Counter Death from Overwork**

*An excerpt from The Japan News and Asia News Network Monday by Mioko Bo and Katsuro Oda, July 27, 2015*

<http://www.asiaone.com/business/japan-plans-measures-against-death-overwork>

As mentioned previously, karoshi, or “death by overwork”, first became a recognized problem in the 1980’s when several prominent businessmen, in the prime of their life suddenly passed-away. In the years since, death due to overwork has been on the rise in Japan, with recent figures suggesting karoshi being the cause of death for over 200 people in the past year. To cope with the rising numbers of death by overwork and claims of workers compensation, the Japanese cabinet passed a new legislation in July 2015 to investigate the causes of karoshi and other work-related problems (Bo & Oda, 2015). This legislation marks the first time in Japan, that the government has become serious in conducting research surrounding karoshi and the investigation of prevention mechanisms.

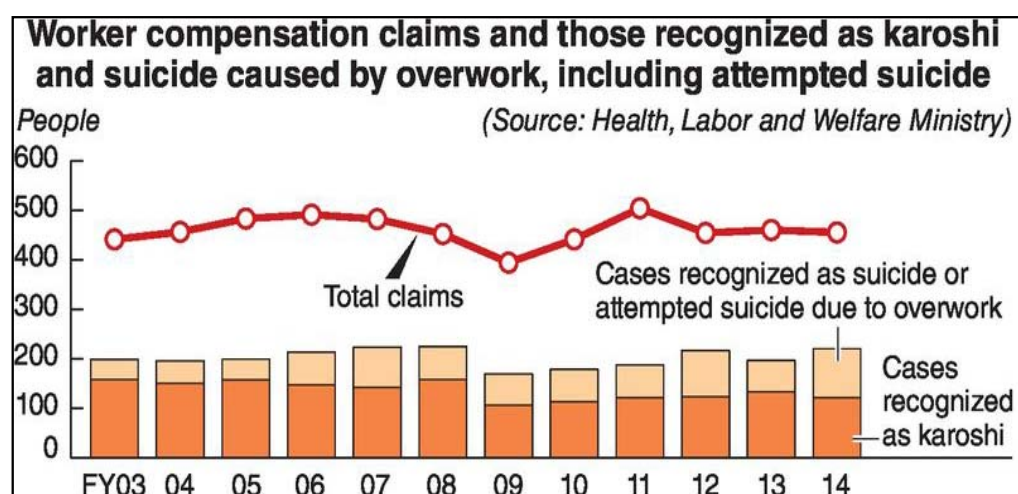
The announcement of this legislation has been long sought by families and friends who have lost loved ones to karoshi, or been denied rightful settlements due to the ridged and often unfair laws defining karoshi. Such example of this can be seen the 2015 case of a 33-year-old man who suddenly died of ischemic heart failure, after working excessive hours in a phone sales company in Kobe. Because his circumstances did not meet the required laws to receive workers compensation - namely exceeding 80 hours of overtime on average, in the two to six months prior to death, the labor standards inspection office turned down the case for eligibility. Outraged, his family members filled a lawsuit with the Osaka District Court system to overturn the labor standards inspection officer’s judgment regarding the case. The Osaka Dist. Court overruled the labor standards findings on



grounds that a wider variety of factors needed to be taken into consideration, such as the worker had averaged 89 hours of overtime monthly in the three years prior (Bo & Oda, 2015). Judgment on working conditions was also made, with the court finding the victim worked under excessive stress from having to respond regularly to customer claims.

The response to recognize and address karoshi from the government has been slow and deliberate, namely due to the fear that it would stagnate Japan's high economic growth. This was especially true during the pre-bubble Japanese economy and it wasn't until 1995 that the government finally settled on a limited definition of karoshi, which required conditions to be present one week before the development of death. These regulations and limitations were gradually relaxed, and in 2001 new limitations were introduced which specified an extended period of six months be taken into consideration.

In the 2014 fiscal year, it was reported by the MHLW that 121 cases of death were recognized due to karoshi. Of these cases, 99 were documented as karu-jisatsu, (suicide caused by overwork). However, these statistics are only thought to be the tip of the iceberg due to the Japanese government's stringent definition of karoshi. When compared with statistics from the National Police Agency and other relevant authorities, it shows around 2,000 workers annually commit suicide because of trouble at their workplaces.



**Figure 4.** Worker compensation claims and those legally recognized.

Source: <http://business.asiaone.com/news/japan-plans-measures-against-death-overwork>

To demonstrate the lack of a fair and well-defined criterion to judge karoshi, the verdicts of 74 cases of workers death, judged not to have been the result of karoshi were overturned in the five-year period from 2009 to 2014. These overturned cases disputed the original findings of the labor standards inspection office and were principally achieved through lawsuits mandating reexamination of the circumstances surrounding the workers death. Because of the governments lack or thereof to fully recognize karoshi as a serious cause of death, there lies a deep distrust between the families of victims of karoshi, that government's legislation actually reflects reality. This notion of distrust and evermore frequent upending of karoshi cases in court has prompted the Japanese government to finally address karoshi by implementing large-scale research.

The government's research into karoshi and other work related issues was slated to start in 2015, and begin with the examination of worker's compensation claims that led to the development of karoshi. The research aims to gather data on working hours, working

conditions before and after the symptoms surfaced, as well as problems in the past to identify common trends that result in karoshi and karu-jisatsu. The research additionally aims to expand its horizons to cases in which workers' compensations claims were turned down, in addition to the study of self-employed workers and public servants.

At present, the Labor Standards Act of 1947 stipulates that employers shall not have workers work more than 8 hours a day, for each day of the week, resulting in a 40-hour workweek. While a 40-hour workweek is most un-heard of in Japan, the effective overtime a company can force its employees to perform can be extended indefinitely if employers and labor unions sign agreements. This deceitful method has left Japan's workers suffering the burden of excessive involuntary overtime compared to their European and American neighbors.

While the government's research is still incomplete, many Japanese companies are starting to recognize the detrimental effects of excessive overtime. Corporations such as Kao are beginning to look into the actual time workers spend at their jobs, rather than the self-reported figures, through electronic entries and exits of office buildings. The company is additionally concerned with the amount of stress employees confront in an effort to reduce the likelihood of karoshi on multiple fronts. Additionally, corporations such as KDDI and Joyful have begun to implement different measures, such as a interval system that forbids employees to return to work until a eight-hour period has passed to combat fatigue.

#### CURRENT KAROSHI DATA FROM MHLW

On 25 June 2015 the MHLW of Japan released the "Status of Occupational Compensation for Karoshi" report related with brain and heart diseases among Japanese workers. Please note that female cases are indicated with parentheses.

The following data summarizes the main parts of the report:

**Table 2.** *Status of occupational compensation for brain and heart diseases.*

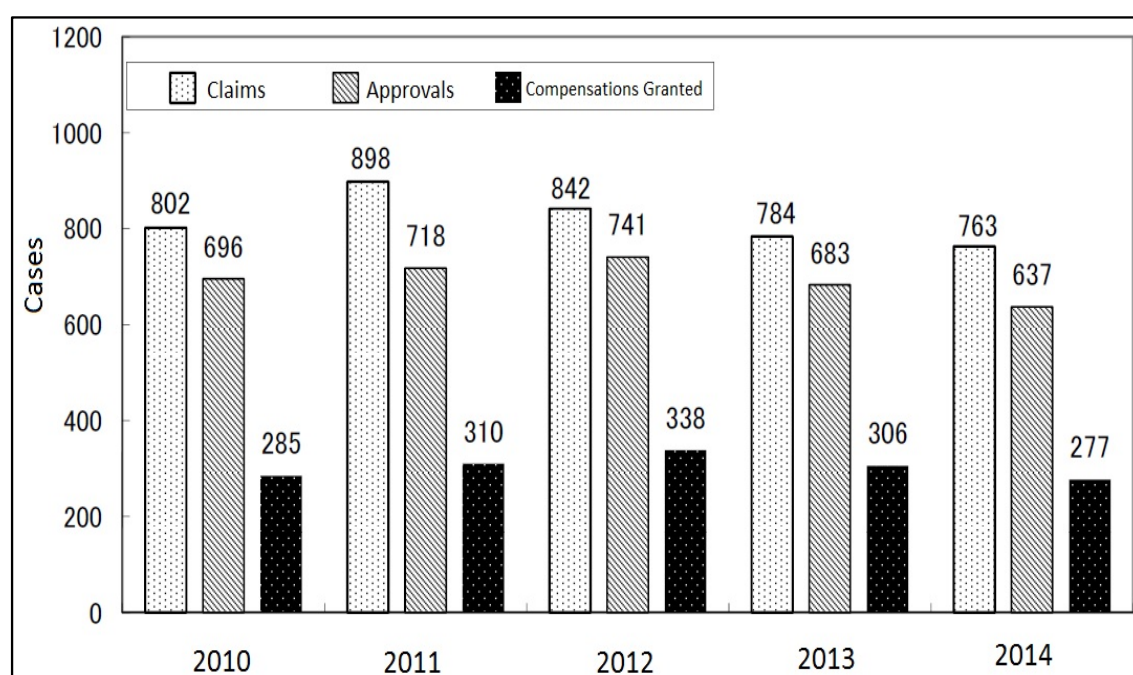
Classification \ Year		2010	2011	2012	2013	2014
Brain and heart diseases	Nº of claims	802	898	842	784	763 ( 92 )
	Nº of approved cases	696	718	741	683	637 ( 67 )
	Nº of compensations granted	285	310	338	306	277 ( 15 )
	[Authorization rates]	[40.9%]	[43.2%]	[45.6%]	[44.8%]	[43.5%] ( 22.4% )
Deaths	Nº of claims	270	302	285	283	242 ( 17 )
	Nº of approved cases	272	248	272	290	245 ( 14 )
	Nº of compensations granted	113	121	123	133	121 ( 3 )
	[Authorization rates]	[41.5%]	[48.8%]	[45.2%]	[45.9%]	[49.4%] ( 21.4% )

Source: Ministry of Health, Labor and Welfare (2016).

In 2014, the total number of claims regarding brain and heart diseases as consequences of overwork totaled 763 cases. Out of this number, 637 cases were approved by MHLW. Decisively, only 277 cases received compensation: a rate of only

43.5% from approved cases (where female cases accounted for 22.4%). There was a decrease of 21 claims in comparison with the previous year (2013) and a third consecutive reduction of total claims.

Regarding deaths from overwork (caused by brain or heart diseases) the total number in 2014 was 242 claims, which had 245 approved cases and 121 cases where compensations was given. This classification also experienced a third year consecutive reduction from 302 cases in 2011, to 242 cases in 2014 as mentioned previously.



**Graph 1.** Evolution of occupational compensation cases related with brain and heart diseases.

Source: Ministry of Health, Labor and Welfare (2016).

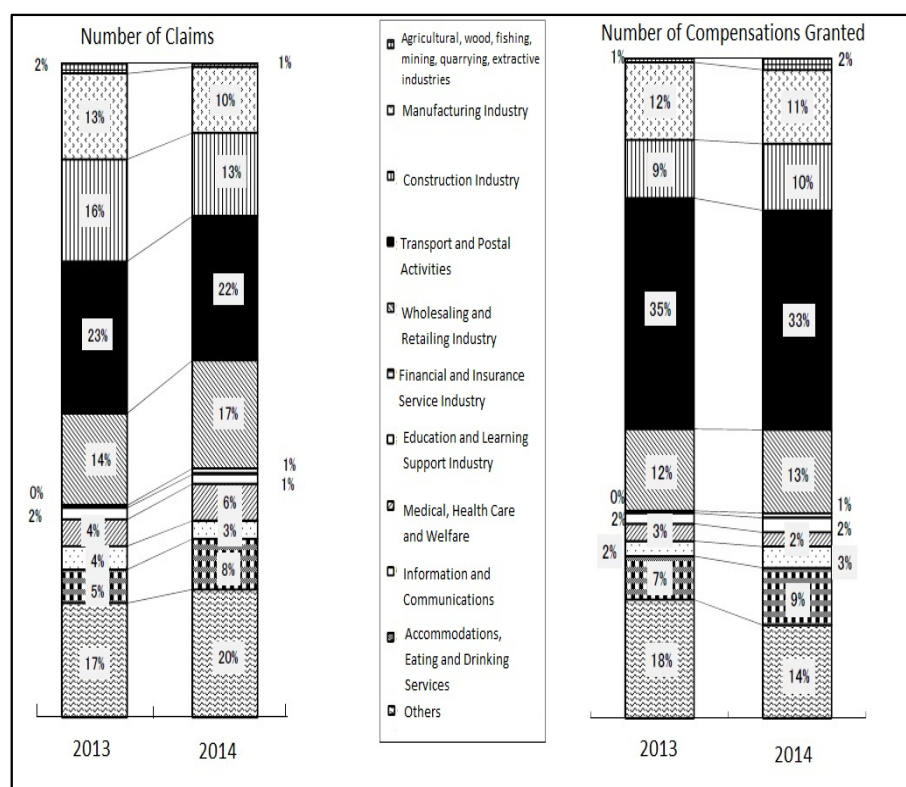
The graph above represents the evolution during the 2010-2014 period, for total number of claims, approved cases and compensations granted. Despite not having a significant variation there is shrinkage of 39 claims from the beginning (2010) to 2014.

Table 3 provides insight regarding the type of industries involved in karoshi cases. The industry that received the most claims during 2014 was transport and postal services with 168 cases, followed by wholesale and retail industry with 126 cases and the construction industry with 97 cases. This represents a similar trend with respect to the previous year. It is interesting to note that construction and wholesale and retail industries received the same number of approved cases, (i.e., 88).

**Table 3. Brain and heart diseases according to industry type**

Year Macrotaxonomy	2013			2014		
	Nº of Claims	Nº of Approved Cases	Nº of Compensations Granted	Nº of Claims	Nº of Approved Cases	Nº of Compensations Granted
Agricultural, wood, fishing, mining, quarrying, extractive industries	13	9	2	5 ( 1 )	10 ( 1 )	5 ( 1 )
Manufacturing Industry	103	86	36	77 ( 4 )	70 ( 5 )	31 ( 2 )
Construction Industry	122	91	27	97 ( 1 )	88 ( 0 )	28 ( 0 )
Transport and Postal Activities	182	167	107	168 ( 3 )	143 ( 2 )	92 ( 1 )
Wholesaling and Retailing Industry	110	104	38	126 ( 21 )	88 ( 19 )	35 ( 5 )
Financial and Insurance Services Industry	3	1	1	7 ( 2 )	7 ( 1 )	2 ( 0 )
Education and Learning Support Industry	14	13	5	11 ( 2 )	13 ( 4 )	6 ( 1 )
Medical, Health Care and Welfare	32	39	8	43 ( 20 )	27 ( 11 )	6 ( 1 )
Information and Communications	28	19	7	21 ( 1 )	22 ( 2 )	9 ( 1 )
Accommodations, Eating and Drinking Services	40	32	20	59 ( 15 )	44 ( 9 )	24 ( 2 )
Others	137	122	55	149 ( 22 )	125 ( 13 )	39 ( 1 )
TOTAL	784	683	306	763 ( 92 )	637 ( 67 )	277 ( 15 )

Source: Ministry of Health, Labor and Welfare (2016).

**Graph 2. Composition Ratio by Industry Type**

Source: Ministry of Health, Labor and Welfare (2016).



From the graph above, we can appreciate the dynamic of claims and compensations granted - in general, the total number of claims have decreased (agriculture, manufacturing, construction, transport, etc.), however, wholesale and retail industry added 3% (from 14 to 17%) as well as accommodations, eating and drinking services (from 5% to 8%). On the other hand, the total number of compensation granted (right side) slightly decreased for transport and postal activities by 2% and increased for construction, wholesale and retail industry.

**Table 4.** *Claims related with brain and heart diseases according to industry type*

2014

	Type of Industry (macrotaxonomy)	Type of Industry (sub-classification)	Nº of Claims
1	Transport and Postal Activities	Road freight transport	120 ( 1 )
2	Services, N.E.C	Miscellaneous business services	48 ( 10 )
3	Construction	General construction work	42 ( 1 )
4	Accommodations, eating and drinking services	Eating and drinking places	39 ( 11 )
5	Transport and Postal Activities	Road passenger transport	33 ( 1 )
6	Construction	Equipment installation work	30 ( 0 )
6	Wholesale and retail trade	Retail trade, general merchandise	30 ( 7 )
8	Medical, Health Care and Welfare	Social insurance and social welfare	28 ( 15 )
9	Construction	Construction work by specialist contractor	25 ( 0 )
10	Wholesale and retail trade	Miscellaneous retail trade	23 ( 4 )
11	Services, N.E.C	Miscellaneous services	17 ( 3 )
12	Wholesale and retail trade	Wholesale trade(food and beverages)	16 ( 5 )
12	Accommodations, eating and drinking services	Accommodations	16 ( 2 )
14	Medical, Health Care and Welfare	Medical and other health services	15 ( 5 )
14	Wholesale and retail trade	Machinery and equipment	15 ( 0 )

Source: Ministry of Health, Labor and Welfare (2016).

Looking further at the sub-classification of industry type, road freight transport, miscellaneous business services and general construction works obtained the highest number of claims submitted with 122, 48 and 42 respectively. It is noteworthy that medical, health care and welfare industry ranks as the industry with the greatest number of claims coming from female workers (15 out of 28), followed by the service industry (not elsewhere classified) with 10 cases.

**Table 5.** *Compensation grants related with brain and heart diseases according to industry*

2014			
	Type of Industry (macrotaxonomy)	Type of Industry (sub-classification)	Nº of Compensations Granted
1	Transport and postal activities	Road freight transport	77 ( 1 )
2	Accommodations, eating and drinking services	Eating and drinking places	18 ( 2 )
3	Construction	General construction work	16 ( 0 )
4	Transport and postal activities	Road passenger transport	12 ( 0 )
5	Services, N.E.C	Miscellaneous business services	10 ( 0 )
6	Construction	Construction work by specialist contractor	8 ( 0 )
7	Manufacturing	Manufacture of fabricated metal products	6 ( 0 )
8	Information and communications	Information services	5 ( 0 )

Source: Ministry of Health, Labor and Welfare (2016).

In the case of compensations granted, transport and postal activities again reached the first position with 77 cases and construction in third place with 16 cases. However, second place was occupied by accommodation, eating and drinking services, with 18 cases. This industry obtained fourth place in regards of total claims (see previous table).

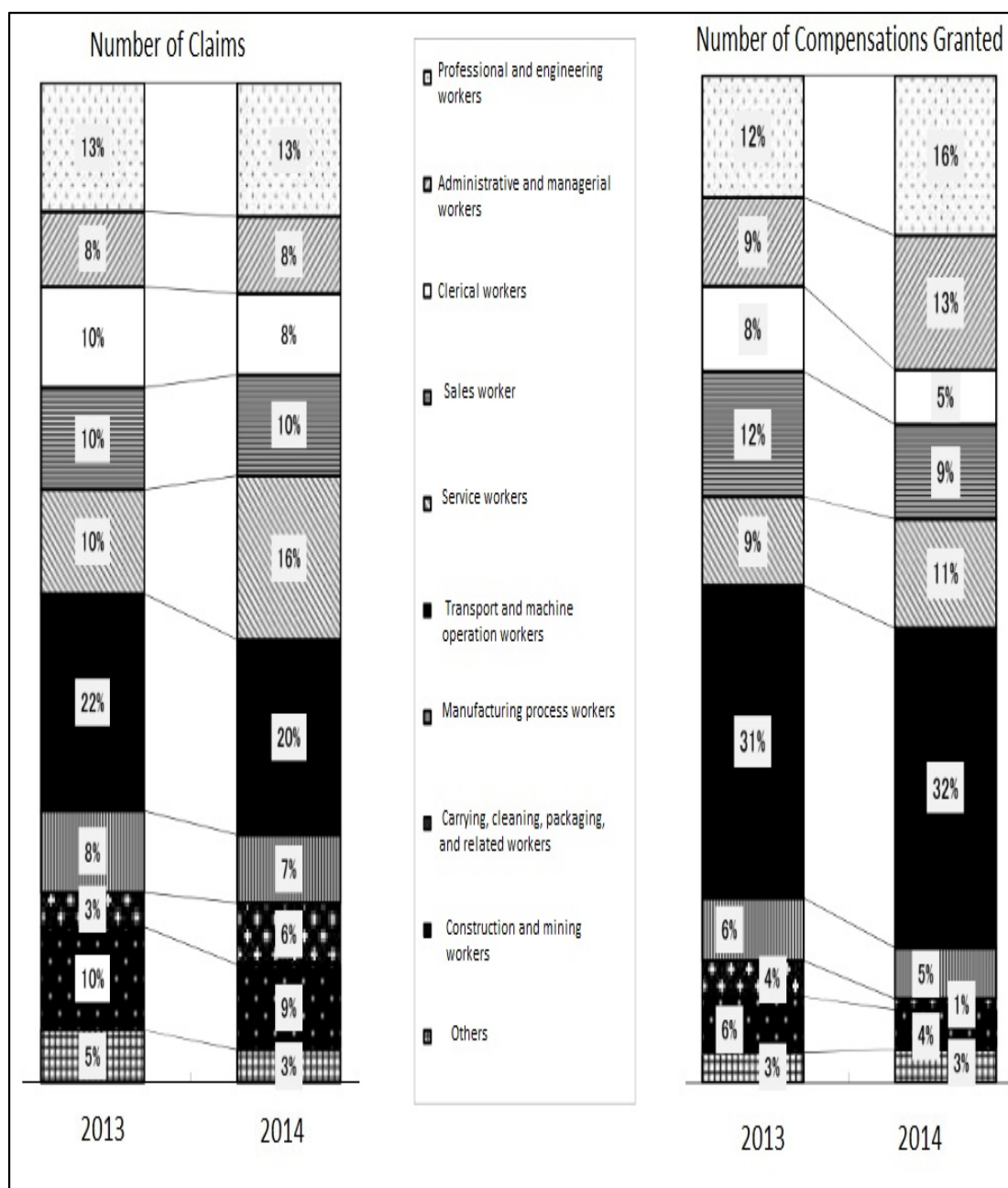
**Table 6.** *Brain and heart diseases-related cases according to job classification*

Year Job Classification	2013			2014		
	Claims	Approvals	Compensations Granted	Claims	Approvals	Compensations Granted
Professional and engineering workers	101	91	37	102 ( 9 )	89 ( 9 )	44 ( 2 )
Administrative and managerial workers	59	45	27	59 ( 4 )	64 ( 4 )	37 ( 1 )
Clerical workers	79	62	26	62 ( 10 )	44 ( 8 )	15 ( 0 )
Sales worker	80	85	38	77 ( 15 )	52 ( 18 )	26 ( 6 )
Service workers	82	82	27	125 ( 34 )	88 ( 19 )	30 ( 3 )
Transport and machine operation workers	170	145	95	149 ( 1 )	138 ( 2 )	88 ( 1 )
Manufacturing process workers	64	48	19	52 ( 6 )	45 ( 3 )	14 ( 1 )
Carrying, cleaning, packaging, and related workers	27	31	11	47 ( 11 )	27 ( 3 )	3 ( 0 )
Construction and mining workers	81	68	17	65 ( 1 )	57 ( 0 )	11 ( 0 )
Others	41	26	9	25 ( 1 )	33 ( 1 )	9 ( 1 )
TOTAL	784	683	306	763 ( 92 )	637 ( 67 )	277 ( 15 )

Source: Ministry of Health, Labor and Welfare (2016).

When considering job classification, transport and machine operators have the greatest number of claims for both, 2013 and 2014 with 170 and 149 cases respectively followed by service, and professional and engineering workers. Nonetheless, in regard to approved cases, professional and engineering workers occupied second place and service workers, third. When it comes to granted compensations, administrative and managerial workers occupy third place with 37 cases.

Graph 3 (below) shows a visual representation of job classification percentages to number of claims and compensations granted:



**Graph 3. Composition Ratio by Job Classification**  
Source: Ministry of Health, Labor and Welfare (2016)

**Table 7.** *Claims related to brain and heart diseases according to job classification*

2014			
	Job Classification (macrotaxonomy)	Job Classification (sub-classification)	Claims
1	Transport and machine operation workers	Driver	143 ( 1 )
2	Construction and mining workers	Construction worker	42 ( 0 )
3	Sales workers	Salesman	40 ( 12 )

Source: Ministry of Health, Labor and Welfare (2016).

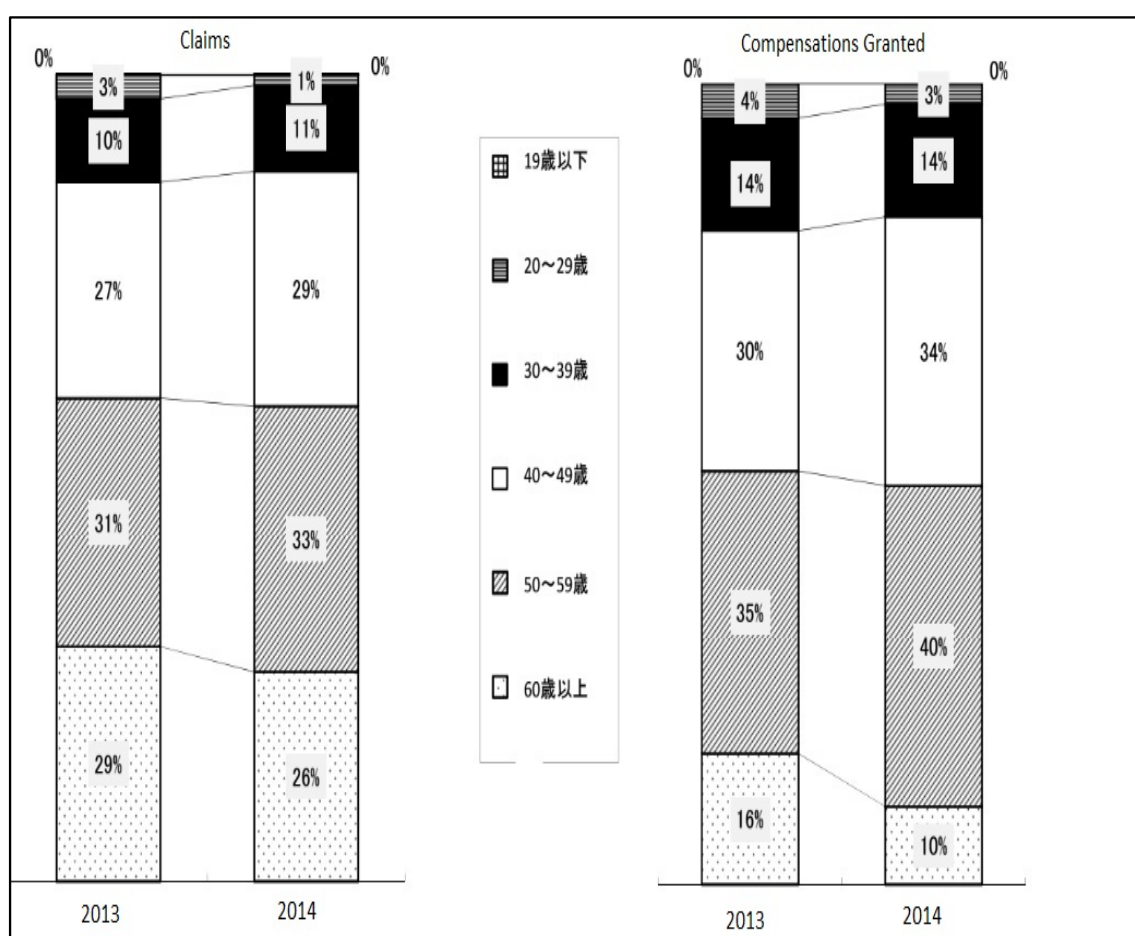
**Table 8.** *Compensation grants related with brain and heart diseases according to job classification*

2014			
	Job Classification (macrotaxonomy)	Job Classification (sub-classification)	Compensations Granted
1	Transport and machine operation workers	Driver	85 ( 1 )
2	Administrative and managerial workers	Corporate member (managerial level)	24 ( 1 )
3	Sales workers	Business worker	14 ( 2 )

Source: Ministry of Health, Labor and Welfare (2016).

Tables 7 and 8 display the fact that transport and machine operation workers are the jobs with the highest levels in number of claims as well as compensations granted (being “driver” the profession considered in both of them). Sales workers occupy the third place in claims considering salesman, however the business workers are the ones that obtained the greater number of compensations during 2014. A significant number of women (12), in comparison with other cases, submitted claims to the MHLW identifying “salesman” their profession.



**Graph 4. Age Composition**

Source: Ministry of Health, Labor and Welfare (2016).

The age group with the most cases of Karoushi claims and compensations granted, either by brain and heart diseases or death caused by overwork, is predominantly for individuals aged 50 to 59 years old, with 33% of claims and 40% of compensations granted in 2014. The second age group at risk is conceded to be 40 to 49 year old individuals, with 29% and 34% respectively. Workers less than 19 years old have a virtually zero cases of diseases and deaths caused by overwork.

Table 9 (below) shows the monthly average overtime work considering brain, heart diseases and number of deaths for karoushi compensations granted in 2014. Most workers (105) have an overwork time of 80 to 100 hours, or an average of 5 hours extra per day considering 20 working days a month. The second case, considers 120 to 140 extra hours per month and 25% of people who overworked more than 160 hours monthly (8 hours extra approximately) died because of this situation.

**Table 9.** *Overtime work (monthly average) related with brain and heart diseases (granted compensations)*

Classification \ Year	2013		2014	
		Deaths		Deaths
Below 45 hours	0	0	0 ( 0 )	0 ( 0 )
From 45 to 60 hours	0	0	0 ( 0 )	0 ( 0 )
From 60 to 80 hours	31	16	20 ( 0 )	10 ( 0 )
From 80 to 100 hours	106	50	105 ( 5 )	50 ( 1 )
From 100 to 120 hours	71	28	66 ( 4 )	27 ( 0 )
From 120 to 140 hours	21	8	32 ( 1 )	14 ( 0 )
From 140 to 160 hours	22	8	23 ( 1 )	7 ( 0 )
Over 160 hours	34	13	20 ( 3 )	8 ( 2 )
Others	21	10	11 ( 1 )	5 ( 0 )
<b>TOTAL</b>	<b>306</b>	<b>133</b>	<b>277 ( 15 )</b>	<b>121 ( 3 )</b>

Source: Ministry of Health, Labor and Welfare (2016).

In all, from the information presented in this section, we can observe that transport and postal services represented the industries with the highest number of claims due to brain and heart diseases caused by overwork (excluding deaths), followed by the wholesale and retail industry and the construction industry. When considering age composition, workers between 50 and 59 years old were identified to be the most affected, working a monthly average of 80 to 100 extra hours.

#### RECOMMENDATIONS AND PREVENTION MECHANISMS

As described thus far, *karoshi* is a problem striking all Japanese working classes, blue and white collars alike, that is merely being recognized by the government itself. The first advise that will be given here is to call a spade a spade, and thus to fully recognize *karoshi* as being a compound problem that is deeply rooted in Japanese business ethics and cultural behavior. As every person is endowed with a bare minimum of wisdom would say: “half of every problem’s solution resides in the acknowledgement of the problem itself”. Thus said, both the government and the working class should act towards making *karoshi* a well-defined matter, with full recognition through law and juridical systems, as well as industry. Additionally, the government should stop ignoring the never ending cases of suicide or death of overwork under excuses such as the lack of evidence that the source of death is indeed *karoshi*, or that death is a noble way to end a servitor’s work that devoted

his life to his country and/or his company. The Japanese government should be the one that pioneers changes that bring improvements in citizen's quality of life, not the opposite.

The government in Japan is trying to cut the expenses on a matter that it judges has no impact on the working force and its efficiency. However, when considering efficiency, the Japanese work force is considered one of the less efficient ones in the entire globe, which is a real shame coming from a country that is leading the world in terms of innovation and good business practices. In fact, western countries have the highest worker efficiency in the world because they don't do much overwork - and if they do, they are more productive during normal hours because they need to get it done in no time so as to meet strict deadlines. In Japan, overwork is the norm and leaving at 5pm or 6pm is a transgression. Employees are totally unproductive and often find themselves hanging around their desks waiting for their bosses to go home, which drop their efficiency sharply. The Japanese government doesn't seem to include the notion of efficiency and productivity in its current definition of *karoshi*, which is why we recommend revising and recognizing the full picture, in order to obtain a well-rounded definition of *karoshi*, as well as to acknowledge its various side effects.

Once *Karoshi* is defined, plans should be sketched in order to eliminate, or more realistically, minimize the frequency and the amplitude at which it occurs. Here we will provide some prevention mechanisms that will act towards this goal. Nonetheless, we should bear in mind that these are mere suggestions and that we are outsiders that are trying to solve problems of a nation that couldn't find solution itself. A problem that is deeply rooted in consciousness, history, culture, ethics, behavior, psychology, business, management and so many other aspects that make it a difficult puzzle to solve. However, we attempt to scratch the surface of the spectrum of possibilities and solutions. We will divide our suggestions to two main parts; the first regarding the prevention of *Karoshi* using a comprehensive industrial health service which will try to impose order in the working environment. The second approach is a broader view of the situation, where we offer measures to be taken by different parties of the working environment, namely the government, labor unions and employers.

### **Comprehensive Industrial Health Service**

A comprehensive industrial health service crafted to counter *Karoshi* was at first released by the general director of the Labour Standards Bureau of the MHLW. Based on this fully fledged program, the goal was to show the intrinsic correlation between several health diseases and hours spent working overtime as well as the preventive measure to be taken by managers in order to deal with such cases in the most effective way. These first part only offers preventive mechanisms for employers and managers - it does include the overhaul of the work place. Such issues will be dealt with in the second part of this section where a broader picture is envisioned.

The source from which the data has been taken that served as a milestone for setting up an entirely new approach of acknowledging work incidents, was severely hindered by the already existing cases of this kind of work and labor problems studied by reports and other papers. In fact, there were only a handful of papers that have actually given a clear definition of how sudden health disorder correlates with the variation of hours spent working overtime. Brain and heart related disorders were taken into account to define a mechanism of causality between overwork and health changes. The next step would to define the relationship between overwork and *karoshi* as an industrial health measurement

that uses qualitative and quantitative studies to realize countermeasures for every type of health disorder, and thus a more legitimate mechanism of detection and prevention can be settled. The summary of results obtained is given in Table 10 below.

**Table 10. Onset of Brain and Heart Diseases and Preventive Measures**

Onset of Brain and Heart Diseases and Preventive Measures To Be Taken by Employers for Overtime Work

Category	Hours of overtime work* <sup>1</sup>	Relation of hours of overtime work to onset of brain and heart diseases	Preventive measures to be taken by employers
I	Basically 45 hours or less per month for the past one or six months	Weak	None
II	Basically 45 to 100 hours for the past one month or 45 to 80 hours per month for the past 2 or 6 months, prior to onset of disease	Becomes gradually stronger as overtime working hours increase	Employers shall provide industrial physicians or physicians qualified to be selected as industrial physicians such as physicians registered with local industrial health centers in the case of workplaces without any obligation to select industrial physicians (hereinafter, "Industrial physicians etc.") with information about the work environment, working hours, number and hours of night work, past medical examination results, etc. concerning workers who are involved in the work. Employers shall be advised and instructed by industrial physicians etc. concerning health management at the workplaces (Measure A).
III	Basically more than 100 hours for one month or more than 80 hours for the past 2 or 6 months prior to onset of diseases	Strong	In addition to Measure A mentioned above, employers shall provide workers involved in the concerned labour with health guidance through meetings with the industrial physicians etc. When the industrial physicians etc. recognize such as necessary, the workers shall have medical examinations which the industrial physicians etc. judge to be necessary. The opinion of the industrial physicians etc. shall be sought concerning the results of medical examinations and the necessary measures to be taken by employers (Measure B).

Source: [http://www.med.or.jp/english/pdf/2005\\_02/092\\_098.pdf](http://www.med.or.jp/english/pdf/2005_02/092_098.pdf)

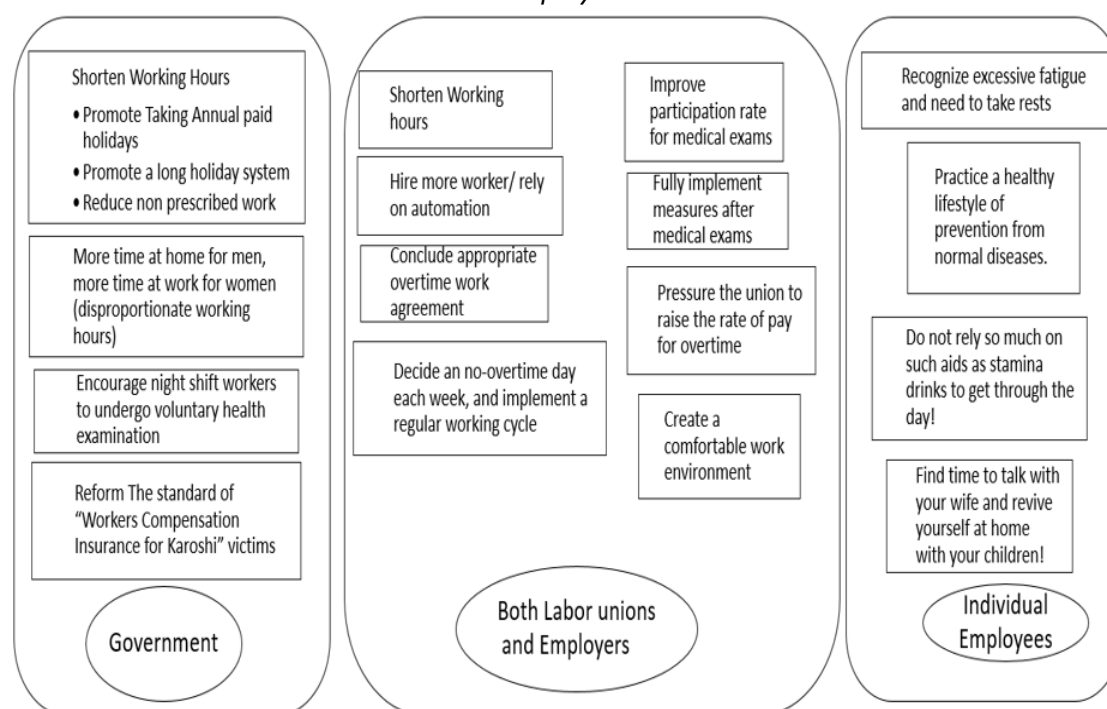
#### Measures to be taken by all different players:

In addition to the preventive measures suggested earlier for employers, in this section we will present measures to be taken by all different players of the problem such as government officials, company managers, labor unions, and individual workers. These measures are a combination and compilation of the papers which references can be found at the end of this paper. As a context for the measures that will be given later, we have to understand that Japan has already known a minor reduction of "official" working hours from 2052 hours in 1990 to 1972 hours in 1992, this was mainly due to the collapse of the bubble economy during this period, but this didn't yield the expected reduction of "observed actual" working hours in workplaces. In fact, there was a negative correlation between overtime payments increase and hours spent working overtime. A similar situation was observed during the early 1970's oil crisis where Japan was trying to employ the minimum needed workforce just to put its head out of the water in a survival instinct to stay in the world market. It seems that this philosophy is still carried on to this day, and that the most critical problem is the actual idea of labor.

Japan should adjust its notions regarding labor, so working hours can be adjusted too, and *karoshi* can be minimized if not eliminated. International organizations might claim fair competition and try to ensure same working rules in Japan as in western countries, but this would only make nationalists rise from their ashes within the country creating even more

turbulence than what is already there. Lawyers of karoshi hotline have actually put on the table some solutions to counter of the stressful workaholic society that Japan has created, which leapfrogged the government initiatives and programs acting towards solving this problem. Table 5.2 represents the compiled measures to be taken by the actors of the karoshi scene.

**Table 11.** *Measures to be taken by Government, Labor Unions, Employers and Individual Employees*



Source: <http://netizen.html.xdomain.jp/Karoshi.html>

## CONCLUSION

This report reviewed incidents of karoshi and karo-jisatsu among the Japanese working population. The trend in reported cases (claims and actual compensations) of karoshi and karo-jisatsu appears to be on the rise over the past decade, despite measures taken by various stakeholders, namely government, labor unions and academia to combat this phenomenon (Araki & Iwasaki, 2002). This could mean that a higher level of collaboration between core stakeholders is urgently needed. The Japanese working population is already troubled by their fast aging structure and more so by premature salary-man death.

A government approach to solving this problem is rather bleak and seems to depend on how much pressure they receive from the public and the international community. There is large gap between number of karoshi and karo-jisatsu claims, approved, and actual compensation granted as revealed in this study.

Japan like many Asian countries has weak and isolated worker's organization (union). Workers have little bargaining power to negotiate their working hours or effect payment for extra working hours. This structure should be revisited including enacting strict law to support stronger workers freedom and combat overtime or service overtime. This should begin with the employee knowing his or her legal working rights and being able to follow them without fear of repercussion.

Due to the government dragging its feet in acknowledging karoshi and karo-jisatsu, as well as stymieing claims for compensation, has caused organizations and institutions to exploit workers by avoiding workers compensation payouts. Mechanisms for quick compensation as well as fines should be enacted to deter further incidences of karoshi in the workplace and promote a healthier work environment from inside companies.

On the other hand, it also appears that victims and the victims' family misunderstand what killed them, or their loved one. Likewise, some organizations may be ignorant or do not fully understand the dangers of overwork and stress in the workplace. Therefore, we propose that if proper education is given to both employers and employees about the link between long work hours and karoshi, hopefully a meaningful internal change will occur. Although karoshi and karo-jisatsu are starting to be recognized in Japan as a serious problem, it is not an issue easily overcome due to the social, cultural and psychological stigmas surrounding the issue. Moreover, it is the Japanese who subject them to this rigor, and the Japanese who suffer and grieve from it. In all, it will be the Japanese who have to finally decide to either continue this practice or join the rest of the modern world where we "work to live", *not* "live to work".

In summary, a work environment based on "desk time" and a culture that endorses it (long work hours and unhealthy practices) causes stress which leads to physical and mental health issues resulting in karoshi, depression and burnout which leads to karo-jisatsu. The Japanese government should seek to improve current prevention mechanisms that are mainly based on secondary prevention (mainly detection and support) such as the Comprehensive Industrial Health Service and the Basic Act of Suicide Control of 2006. The government should determine the root cause of the problems and determine ways to quickly address workplace conditions that could be resulting in karoshi and karo-jisatsu in Japan.

To conclude, some initiatives for government and business management to help combat and reduce the rising number of karoshi and karou-jisatsu cases are suggested:

Government Initiatives	Business and Management Initiatives
<ul style="list-style-type: none"> <li>• Seek change in labor policy to protect workers and amend laws to better define karoshi and serve the citizens of Japan</li> <li>• Seek change in work culture</li> <li>• Increase liability of firms in workers compensation payments where karoshi is determined to be cause of death and by imposing hefty fines to those who abuse overtime.</li> <li>• Advance and increase mental and psychological care awareness by investing in mental health initiatives</li> <li>• Improve current mechanisms that focus on secondary prevention (such as the Comprehensive</li> </ul>	<ul style="list-style-type: none"> <li>• Increase internal processes efficiencies so workers can complete their jobs in a reasonable amount of time</li> <li>• Implement RFID system to fully monitor workers time spent in the office</li> <li>• Implement 1 or 2 days a week where there will be no overtime – "lights out at 6"</li> <li>• Amend company policy to address overtime, over-work, stress and burnout</li> <li>• Switch from age-based promotion system to performance based</li> <li>• Provide incentive to managers to comply with overtime rules and regulations</li> </ul>

<p>Industrial Health Service and the Basic Act of Suicide Control of 2006) thus moving from treatment to prevention and support</p> <ul style="list-style-type: none"> <li>• Provide third party legal assistance to those seeking workers compensation for karoshi</li> </ul>	<ul style="list-style-type: none"> <li>• Provide mental and psychological health care</li> <li>• Implementation of interval system to guarantee workers do not return to job until a 8 hour period has passed</li> </ul>
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