Fatigue And Public Safety

Measures To Improve Operational Performance

By Richard Kay

Public safety work is well known for long hours and alternating shifts between day and night operations. This creates the very real issue of sleep deprivation and fatigue that can have a drastic effect on officer performance and operational safety whilst on duty.

The impact of long shifts, rotating schedules, and insufficient sleep on officer reaction time and threat decision-making, along with poor personal habits and arbitrary policies, can put officers at risk. Fatigue decreases attentiveness, impairs physical and cognitive functioning, diminishes the ability to deal with challenges, and sets up a vicious cycle – fatigue decreases the ability to deal with stress and stress decreases the ability to deal with fatigue.

In addition, chronic sleep deprivation is associated with cardiovascular disease, gastrointestinal disorders, sleep disorders, and metabolic syndrome – the group of risk factors that increase the chances of coronary artery disease, stroke, and Type-2 diabetes.

Sleep Deprivation And Mental Performance

The earliest scientific evidence of a link between sleep and performance dates back to the early 1930s, when a daily pattern in the speed and accuracy of cognitive performance was discovered. Even in well-rested individuals there was a decrease in individual performance that occurred in the early morning and again late at night. In addition to normal fluctuations, not getting enough sleep has a significant effect on the ability to function. Sleep deprivation negatively impacts mood, ability to focus and access higher-level cognitive functions, generally referred to as mental performance.

The most immediate effect of sleep deprivation is 'sleepiness', which may be experienced as general fatigue, lack of motivation, or even the experience of nodding off. After a period of sleep deprivation, there are noticeable changes in brain activity, corresponding to a lower level of alertness and a general propensity to sleep. Any period of continual wakefulness beyond the typical 16 hours or so will generally lead to these measurable changes.

Concentration, working memory, mathematical capacity, and logical reasoning are all aspects of cognitive function compromised by sleep deprivation. However, not all of these functions rely on the same regions of the brain, nor are they impacted by sleep deprivation to the same degree. For example, the region of the brain known as the prefrontal cortex is responsible for many higher-level cognitive functions and is particularly vulnerable to a lack of sleep. As a result, people who are sleep deprived will begin to show deficits in many tasks that require logical reasoning or complex thought.

Determining just how much performance is affected by sleep loss is difficult, because of individual differences in sensitivity to sleep deprivation and motivation to stay alert despite sleep loss. However, the evidence is clear that a lack of sleep leads to poor performance.

The most common physical effects of sleep deprivation include the following:

- **Sheer exhaustion,** a complete and utter feeling of lethargy. It doesn't matter how trivial a task may seem, you don't want to do it and feel drained even thinking about doing it. This is the most common physical effect of sleeplessness, and usually the first to hit.
- **Impaired coordination,** a high level of inadequacy, as though you've been shot up full of pain killers and are operating in slow motion. A dangerous effect if a job requires a high attention level and split second decision making.
- **Affected vision,** trouble focusing and seeing clearly. It's not uncommon to experience a little haziness when sleep deprived. However, this effect combined with others means you'll be nearly incapable of doing anything without some form of help.

- **General discomfort,** feeling uncomfortable, unrelaxed and, for lack of a better word, 'icky'.
- **Health problems** due to the weakening of the immune system over time. Our body needs rest to function properly and stave off infections that attack it daily. Sleep deprivation means that vital rest is not being obtained. The weaker the immune system gets, the harder it will be to battle the pathogens which enter our system, causing numerous health problems over time.

Operational Risks

Two common fatigue-related operational risks to officers are vehicle incidents and violent confrontations.

The greatest risk from drowsy driving comes from officers heading home fatigued after shift. Before the obvious hazard of falling asleep at the wheel occurs, there's the issue of momentary inattentiveness. A drowsy driver does not experience a steady decrease in driving ability. They get random, but increasingly frequent, lapses of attention. During their work shift, periodic shots of adrenalin may help officers stave off drowsiness until they're off-duty, but when the adrenalin wears off, the payback comes.

Fatigue is also a prime candidate for affecting how well officers do in a violent confrontation. Information suggests that long work hours and erratic, insufficient sleep put officers more at threat in confrontations. As officers get more tired, they experience a 'cognitive narrowing' that can cause them to miss important elements in the surrounding environment. This is similar to the 'tunnel vision' stress reaction that is common in a threat situation and indeed may accentuate that phenomenon. Officers are not able to shift focus readily with a lot of competing demands on their attention.

Moreover, the fatigue-related narrowing can also impede decision-making. Judgment is likely to be compromised and the risk increases that officers won't make as good decisions as they otherwise would. When tired, we tend to latch onto a 'solution' for challenges that confront us and stick with it even when objective information suggests it is wrong. Parts of the brain that we know are especially vulnerable to fatigue are those that help control emotion and arousal and those that direct the executive functions, such as making and realising the consequences of decisions. These elements obviously affect our ability to survive life-threatening challenges.

Being tired puts officers at a substantial disadvantage, compared to being fully alert and having their best faculties for detecting and addressing the threat.

Officer Responsibility

Studies show that human beings are lousy judges of how impaired they are from fatigue. One of the first parts of the brain negatively affected by lack of sleep is the part that looks in on itself and reports how you're doing. Cognitive ability can be affected by fatigue without realising it, to the same degree as someone who's drunk. People's perception of how tired they are don't relate accurately to how tired they really are, meaning you can't self-monitor fatigue accurately.

Officers need to be the first line of defence in combating fatigue. Personal issues that affect whether they get the recommended 7-8 hours of quality sleep per 24 hours include:

- Sleep environment
- Caffeine/alcohol consumption
- Overall level of health and fitness
- Working a 12-hour shift and then tacking on overtime or a second job
- Scheduling sleep appropriately if working nights

The body requires sleep to 'reboot' properly every day, both psychologically and physically, so officers need to view rest and recovery as a critical aspect of their daily schedule. Create a restful environment and engage in activities that promote relaxation rather than arousal. This assists with falling asleep, as well as the overall quality of sleep.

Employer Adaptations

Protecting officers from the negative effects of fatigue requires a collaborative effort between organisations and personnel. Organisations can help by scheduling shifts to more closely mirror natural body rhythms. The perfect or least harmful shift is uncertain, but officers most at risk seem to be those who work through the night, because the body's natural circadian rhythm is to be awake and working in daylight.

In most people, there tends to be a gradual decrease in alertness after 10pm, hitting bottom between 3-6am. From 6am onward, light rays from the sun trigger cells in the brain that promote a renewed cycle of alertness. The longer a shift is in darkness, the more at risk of fatigue officers are. If they've been up for 12 hours, they're more at risk at 4am than if they've been up for 12 hours and it's 4pm.

Organisations often arbitrarily pick the times for shifts to begin and end, but with a little flexibility they could favour the night-shift officers, who are most at risk. Have them start earlier and off the job and in bed earlier, even if it means the day shift has to start earlier.

Organisations often don't have to have the same length of shifts all around the clock. They could have 12-hour shifts during the day and 8-hour shifts at night. They could sharply limit the number of night shifts an officer works consecutively. The more night shifts worked in a row, the less resilient officers become to being tired. After about 3 consecutive night shifts, they'll start to see a substantial problem and will need time off to catch up on sleep.

Experts advocate that organisations provide a 'rest room' where officers can take 30 minute restorative breaks during duty hours. Even if they don't fall sound asleep, just resting with their eyes closed for 30 minutes in a dark and safe room can have a major refreshing effect. This may be a bit of a pain for administrators, but it's smart in terms of risk management. Organisations will end up getting better work out of their people while keeping them safer.

Even though research clearly shows fatigue from sleep loss degrades human performance while driving, making decisions, collecting information, communicating, and reporting, little is known about the magnitude of those effects in public safety work, important knowledge needed to manage public safety fatigue in a cost-effective manner. Ongoing research provides a scientific basis for managing public safety fatigue, studying the cumulative impact of work-related fatigue on the performance of officers in 3 critical operational tasks: vehicle driving, use of force encounters, and reporting.

Dealing effectively with the fatigue issue in public safety requires a balanced approach. Organisations have to back the demands for service in their community with concern for the needs of the officers deployed to meet those demands. But if officers are not making rest and resilience priorities for themselves, whatever organisations do may not be enough.

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