

Musculoskeletal Disorders in the Nursing Profession: A Case Study

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Musculoskeletal Disorders: A Real-Life Case Study

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Each year, millions of Americans are put through strenuous and repetitive tasks at their jobs. Injured workers are forced to take off work, go through physical therapy, or must go through surgery to fix their injuries. In the long term, many of these workers will develop common chronic injuries such as carpal tunnel and arthritis. To help reduce nonfatal and fatal injuries in the workplace, companies such as GE have put in place exercises to help floor workers stretch their muscles and avoid straight repetition of tasks. Other companies have implemented automated machines so that workers are not straining themselves too hard. Although these new ideas help workers, it doesn't solve everything as many workers have found out.

My case study involves a Licensed Practical Nurse (LPN) named "Olivia". Olivia is a 56 year old mother of one living in Southern New Jersey. Olivia works as an LPN of the night shift at the Veterans Memorial Home in Vineland, NJ as shown in Figure 1. An LPN works under registered nurses (RN) and doctors to take care of patients. Although she has worked at a Lyme Disease Treatment Center and a local hospital as a newborn nurse, she describes this job as her hardest and most strenuous job yet. Olivia's hobbies outside of work include raising her 20 year old daughter when she's home, volunteering at the local YMCA with young children, garden work on her own and with Rutgers University as a part of their Master Gardener program, perfecting her culinary and pastry chef skills, and working with clay pottery at the local Clay College. Olivia gets her exercise from physical therapy, walking up and down stairs as well as around her home property, and does a lot of walking up the hallways during her shift.



Figure 1: Aerial View of the Veterans Memorial Home

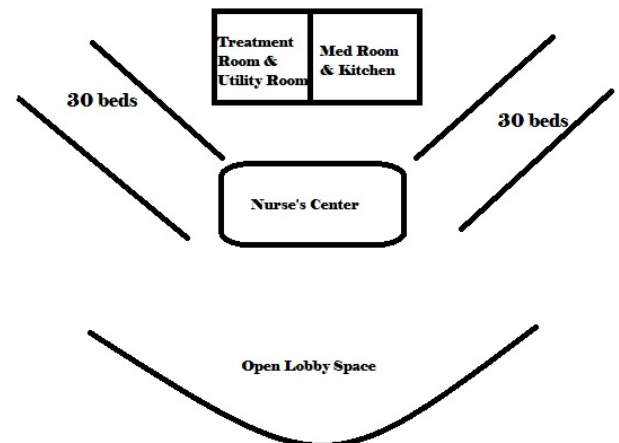
The one thing that sets Olivia apart from everyone else is her schedule. While most people stay up all day and sleep at night, Olivia works at night and sleeps during the day hours. Although she has been working night shift for seven years, she still hasn't gotten used to the switch. Olivia's average day starts out with housework or gardening when she comes home at 7:30 AM. After a few hours of exhausting work, Olivia sleeps until the early afternoon. When she wakes up, she normally begins more housework and cooks for herself or her daughter. After some more cleaning, she watches movies or her favorite TV shows to put her back to sleep. At 9:45 PM, Olivia wakes up for work. Before she leaves, she feeds and takes care of her daughter's cat and dog. After she is prepped for work and everything is in order at home, she leaves for her 11 PM – 7 AM shift at the Veteran's Home.

Olivia's average night at work starts as soon as she walks into her unit. When she walks in, she heads to the nurse's station to get a report on the sixty patients she is responsible for. Just as a precaution, she walks up and down both hallways to make sure her residents are "okay and still breathing". Many of her residents are very elderly and extremely sick with Parkinson's, Dementia, Alzheimer's, and other mental and physical illnesses. Death is a frequent occurrence in her line of work. After she makes her rounds, she and the other nurses wait for the supervisor to come with orders. If she is being sent to another unit, she will follow the other unit's orders. If she is to stay on her unit, she begins her rounds. Her rounds consist of pushing two medicine carts that weigh about forty pounds each and two treatment carts. She says that pushing such heavy carts and taking over for nurse's aides is completely unfair and not equally distributed at all. After grabbing the carts, she is responsible for counting out the narcotics on each cart. Once everything is accounted for, she begins answering call lights and goes through the medicine and treatment book to figure out what patients need that night. Once all those tasks have been

handled, she and the other nurses are responsible for housekeeping chores. These include cleaning as well as stocking carts, closets, and the refrigerator. Around 2 AM, Olivia goes on break if she's lucky. After her break, she sorts and reads through charts and writes in any important information that might be missing. She also puts together resident's doctor appointments and "red lines" through orders. Red lining is the term used for when nurses check through patient's charts and make sure doctor's orders for treatment are taken care of properly. After this is taken care of, Olivia makes her last rounds which includes cleaning up, making sure all her patients are alive and well, count the cart supplies, and gives her report to day shift coming in at 7 AM.

Unlike most workers in offices and buildings, Olivia doesn't have a set "workspace". Here in Figure 2, I have drawn a diagram depicting Olivia's work unit. The unit has a central station also known as the nurse's center. Here nurses like Olivia answer the phone or take calls, work on patient charts, write any notes or do paperwork, observe patients, answer call lights, and work on doctor orders. On either side of the station, there are two wings with 30 bedrooms each for a total of 60 patients. On those wings, Olivia works on patient assessments, dressing patients, taking patients to the bathroom, answering their requests, talking to the patients, giving the patients their medications, and giving patients their treatments. Behind the nurse's center are four rooms: the treatment room, the utility room, the medicine room, and the kitchen. In the treatment room, Olivia takes out the treatments she needs that night, puts the stock away, takes out stock for the med room, and puts together the treatment carts. In the utility room, she gets out the cleaning supplies as they are needed. In the

Figure 2: Olivia's unit



medication room, she puts together the med cart, checks to make sure the medication isn't outdated, puts together the stock closet, and orders medications. In the kitchen, she cleans the refrigerator, stocks the refrigerator with Ensure and other supplements, fills water pitchers and ice containers for the residents, and heats food for residents.

Since Olivia doesn't have a traditional workspace, she considers the whole unit her office. She spends almost her entire night walking around without stopping. Although Olivia wears supportive sneakers, her surfaces that she stands on are very hard on her feet. The floors at the Veteran's Memorial Home are linoleum with concrete underneath. When Olivia can sit down, she sits in the rolling chairs that have padding and some back support. Although she uses basic office equipment, most of Olivia's equipment is medical supplies. Each night Olivia uses medication carts such as the one in Figure 3, treatment carts, wheelchairs, shower tables and chairs, chart racks, computers, O₂ tanks, syringes and needles, medicine bottles, feeding tubes, and elastic stockings.



Figure 3: Medication cart

Olivia's job is extremely demanding of her lower back and legs. Outside of all her paperwork, Olivia lifts patients, pushes patients, stocks inventory, pushes medication and treatment carts weighing about 40-50 pounds each, fast paced walking through the unit, searching through charts, repositioning patients, and escorting patients around. These tasks have caused Olivia the most pain and discomfort on the job. At 5'3", Olivia has a harder time than most of her coworkers because of her size. Typically Olivia bends at a 60° angle when she reaches over the desks, a 20-60° angle while getting office supplies, and finds herself twisting from side to side in order to reach high up supplies. When she bends, she generally bends slightly to halfway bent at the lower back. This causes her a lot of pain and stiffness in her back. When Olivia has to lift, she lifts a lot of weight. Her patients weigh anywhere from 150-300

pounds, the printer paper boxes weigh near 40 lbs, the boxes of gloves weigh around 25 pounds, and her stacks of charts weigh between 5-10 pounds. If the boxes are too heavy, she resorts to pushing or kicking them into place and then bending up and down to put the inventory away.

Olivia came up with specific risks that most likely have affected her body. They are lifting people up, lifting things and people off of the floor, bending and twisting motions, lots of repetitive tasks, reaching up and down constantly, reaching and stretching above normal, and constantly getting up and down on step stools. Although her job knows all of these things cause pain, they have said “we will not give a nurse a referral for occupational therapy because we cannot change the nature of the job”. However, Olivia’s injuries have created changes in her workplace. In early March, Vineland had a snowstorm. In the parking lot, the lighting was dim and maintenance didn’t put out rock salt. Olivia slipped on the ice and fell on her back and arms. She bruised her arm and cracked her elbow but after time off, Olivia saw some changes. The lighting was made brighter, a security guard is always outside to make sure employees get in and out safely, and every bit of ground is salted after a storm. Although this doesn’t change her every day schedule pain, she is very glad she could make a difference in order to help others.

Olivia’s injuries mostly concern her lower back and shoulders. Over the years, she has strained her back and shoulder muscles so much that they no longer respond to treatment. Her latest injury resulted in x-rays that showed the opening in her spine for the nerves has become smaller. In the human body, the spinal cord runs from the base of your skull down to your low back. The spine is built from 24 vertebrae that contain discs in-between each as shock absorbers. When a disc becomes bulging or herniated, the disc moves out of place. As shown in figure 4, this creates pinched nerves in the spine which causes frequent pain that sometimes becomes excruciating. Many doctors in her life have diagnosed her with

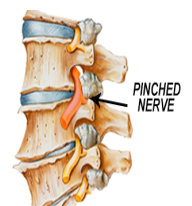


Figure 4: Pinched nerve in the spinal cord

various degrees of muscle strain, contusions, and a pinched sciatic nerve. Muscle strains “are injuries to a ligament that can mean one or more ligaments is stretched or torn” (National Institute of Arthritis and Musculoskeletal and Skin Diseases). Contusions of the back are usually caused from blunt trauma or blows to the back muscles. Olivia has suffered from contusions and strains when lifting patients from their beds has gone very wrong. One of Olivia’s many jobs is lifting patients into and out of their beds. At 5’3”, picking up six foot tall men weighing 150 to 300 pounds can damage an already strained back. She has fallen a number of times from not being able to handle the weight she’s picking up. To combat the pain, Olivia has gone through tractions, electrical stimulation, massages, chiropractic work, hot and cold pack therapy, and physical therapy. Her injuries are unfortunately unable to be fixed by surgery as they are due to repetitive injuries and aging. If Olivia continues to strain her back, she will slowly become more crippled until even simple tasks such as reaching for the phone are too painful to do.

Olivia’s back and shoulder injuries have affected her daily life for years but she continues to push through it. “Things, people, and tasks will not stop needing you just because you are injured. You have to push through it”, she says. Every day she has nerve pain in her back and shoulders. Without Tylenol and other pain relievers, she is generally unable to do much of anything. She can’t move as fast or as well anymore, she’s more tired since the pain wakes her up frequently, and doing her work and hobbies causes more strain and pain for her. Every day she wakes up frequently for ice packs or hot packs so that she can sleep. She takes enough aspirin that when she gets a cut, she bleeds more than the average person due to thinner blood. All of these problems affect her heavily. Short-term, Olivia doesn’t do as much as she would like including bowling, ice skating, or skiing with her daughter. Long-term, she jokes that she will

look like the “hunchback of Notre Dame”. Her daughter has joked she’ll need an electric scooter and stair lift but she swears she will refuse that even as a hunchback.

Although Olivia jokes about her pain, she said she has missed an average of 10 days of work a year for her back injuries. A few years back, she recalled she missed work for a few weeks when a resident pulled down on her while she was helping two other aides pick him up. Sometimes when she returns to work, she still doesn’t feel better but continues to work or else she could lose her job. On an average day, she rates her pain as a five or six on a scale of one to ten. When the pain is at its worst, she rates it as a ten out of ten. Even though Olivia was given a back support similar to figure 5, she rarely wears it because it doesn’t help her when she’s at work. So she continues to push through the pain and avoids doing overly strenuous tasks.



Figure 5: Back brace

To assess Olivia’s workplace, I used the Body Pain Discomfort Survey (BPD) and the Rapid Upper Limb Assessment (RULA). The BPD was a great tool for me to use because it made it easier for her to tell me where her pain was, how intense the pain was, and why she has the pain. Her results shocked me because they showed me her entire body was being negatively affected from her eyes to her feet. When it came to her upper body, the pain seemed to be widespread and most of it was due to strain from chart work and lifting her patients. When it came to her lower body, the pain seemed to be mostly from the eight hours of walking around she does every night. Next, I used the RULA to assess a task she usually ends up doing a few times a night. Lifting patients seemed to be Olivia’s number one reason on why she was injured so I decided to assess it. When Olivia lifts patients she uses a lot of lifting, pushing, and pulling motions. Every time she lifts, she is bent over and her body twists to the sides as she does the task. Each person takes about 10-15 minutes and she tends to do the task about five times a night.

After assessing all her movements, Olivia had a RULA score of 7 meaning that her work needed to be investigated and changes needed to be made immediately. Even though Olivia can use a sling lift or a sheet underneath a patient to move them, it does very little in the end. In fact, Olivia doesn't even use the lift because it hurts her back more to set it up than it's worth.

Olivia's work environment is also very unhealthy. She claims that there is no social support network. Everyone constantly complains to the management but nothing ever gets done about it. Morale in her unit is very low. Many of her coworkers are very angry because the workload per person is extremely high, the expectation for each employee is too high, the residents are extremely demanding and "act like they are the only people to exist in the world", and residents who are insomniacs or mentally unstable wear down the nurses. At work, her coworkers don't act as one cohesive unit. There are many cliques within the unit and a lot of people use rank to get what they want. Many upper rank nurses don't do their own work and delegate it to lower rank nurses who already have a heavy workload. When I asked Olivia if the management has done anything to help solve the problem she laughed and said, "Management doesn't want to hear your problems they just want results". Management is not flexible and supportive of personnel and Olivia constantly finds herself making her own decisions.

One particularly bad day was about a week ago when Olivia came into work. It started out with someone who misreported information to Olivia when shift started. After getting down into her work for the night, she realized there were many errors and the information she was given was completely wrong. The wrong information immediately angered Olivia as she tried to fix the mistakes made by the other nurses. During the turnover paperwork process, this mistake was not taken lightly and a lot of paperwork had to be redone. Shortly after fixing the problem, one of Olivia's supervisors called her in. This particular supervisor is African and told Olivia she

wasn't going to give Olivia off to pick up her daughter from college. Her reasoning was that there would be one night no one could cover for her. Furious, Olivia went to her other supervisor who is a Caucasian woman. When Olivia asked her why she couldn't have off her supervisor said, "You are the wrong skin color to ask for a few days off". It turns out, two African nurses were given off right before Olivia. One of the African nurses even said, "I know I get more time off because I'm black". It's uncommon to hear about reverse discrimination in the workplace but unfortunately for Olivia, this unfair practice seems to be a huge part of her workplace. Olivia "coped" in this situation by doing what most nurses do at her job – went to a supervisor. Olivia found herself yelling and slammed her fist down on the table. She told me that she was tired of people who used their children as excuses and was tired of her child coming behind everyone else's. She told her supervisor she would be gone no matter what and her Caucasian supervisor gave her the time off.

At Olivia's work, she finds herself overworked and overstressed. Her job has to legally provide each nurse with two 15 minute breaks and one 30 minute break a shift. However due to the workload, Olivia rarely ever takes any of those breaks. She said, "If you take a break you won't get out of work on time and being on day shift is much worse than your worst night on night shift". In fact a few years ago, Olivia experienced day shift drama by taking a break. A man had disappeared from the facility to go outside. Although it is completely allowed (residents are allowed to do as they please), many nurses didn't know where he had gone. The man decided to wear a winter jacket in the middle of summer, ended up staying in the sun too long, and died outside. Olivia was then forced to stay behind and help nurses on another unit with their paperwork. The heavy workloads also don't allow nurses to self-pace. Nurses like Olivia find themselves running "like a chicken with their head cut off" from start to finish because you can't

leave if your work isn't finished. Although Olivia tries her best to get everything done, injuries and death cause backups and require extensive paperwork. Luckily when Olivia needs a break, she gets time paid off for sick days and vacation days. Olivia also refuses to work overtime anymore because "the money isn't worth it when your job is that stressful". Having the weekend off has helped Olivia recover from stress and injury and allowed her to spend time on her hobbies and with her daughter. That is something that money can't buy.

Olivia believes that one major change could change everything about her workplace. She believes more nurses on staff would solve many of the problems. With more nurses on the unit Olivia and others could work at a slower pace, actually take their breaks, less paperwork per nurse, less patients given to one nurse, each nurse would only push one cart instead of two or more, more people to answer call lights, and more nurses to help lift patients. She believes more staff would make the job easier for everyone and this change could potentially make people less stressed and reduce workplace injury. Another solution was to cut down chart size because the heavy files hurts her wrists and the constant flipping through pages hurts her stiff fingers. Her last solution was to make the medication and treatment carts smaller. Although her job has done so, they are still very large and difficult to push all night. I also think Olivia would benefit from a workspace designed for someone her height. Lifting things from the floor to above her head is taking a toll on her back. If she has to lift anything, I think it should be from a neutral height and then be lifted upwards.

Even though many companies and workplaces have implemented new rules to help reduce injuries, they don't always work. It's up to our field to come up with better changes and solutions for these injuries. After we come up with ideas, it is up to the companies to implement them. Although many solutions are obvious, cost is always a major factor in changing old ways.

If we can create a cost efficient solution that actually works, we can slowly decrease the rate of people who are injured every year like Olivia.

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