Whiplash & Whiplash Associated Disorder A Yoga Therapy Perspective

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Introduction

Research Goal

The goal of my research is to identify what whiplash is, whiplash associated disorders are and what conditions/disorders may occur after whiplash. Once that is determined, we look forward to providing yoga therapy remedies for some of the conditions caused by whiplash.

Who do I intend to treat and study

I intend to treat and study people with cervical injuries that are still suffering from chronic pain and other disorders caused by the whiplash. The age range is from 25-85 years of age.

A personalized, effective, safe and natural treatment program is needed to positively transform each person back to a state of flourishing health and I am looking forward to providing this.

Techniques will also be given to deal with stress and pain; self-help techniques to empower each individual to work on themselves and enable them to get back to normal activities as well as any appropriate nutritional, postural or lifestyle advice.

Through first-hand experience having acquired whiplash, I have already undertaken several techniques and procedures to enable healing in my cervical spine. Having experienced several methods, I have found what worked for me and what did not work so well. It took many years to see noticeable decrease in pain and stiffness. The stiffness is still there however, the pain is chronic and is aggravated by certain conditions: stress, weather conditions, humidity, job activities, long periods sitting at the desk, home activities, even certain types of exercise, and diet.

Why I chose this topic

I chose this subject because I have experienced whiplash first-hand. I know and understand how it feels to have chronic pain and other conditions derived from whiplash after having had such an injury. I would like to assist in the rehabilitation of people with whiplash injuries and give me the understanding they need to move on and progress in their healing with growing confidence in their new healing self. In that same note, I would like to apply yoga therapy techniques to improve current whiplash conditions, primary and secondary since they both seem to be interdependent on one another.

Description of Condition

When the neck is jerked back and forth or from side to side with further acceleration of the head relative to the cervical spine. People who suffer from this may have been suddenly and forcibly struck from behind or the side while in a vehicle. Whiplash does cause real pain and the pain can endure many years. 1 Whiplash is a sudden, moderate-to-severe strain affecting the bones, discs, muscles, nerves, or tendons of the neck.2 It causes hyper-extension of the neck and head as the torso of the person hit moves forward. After a short delay, the head and neck recover and then hyper-flex forward. This abnormal motion causes damage to the soft tissues the keep the cervical vertebrae together. Pain in the neck, shoulders, head or the base of the skull that occurs after a motor vehicle accident is often called "whiplash." 3b The term "whiplash associated disorder" as defined by Spritzer et al was defined as such since it lacked definition 4. This disorder is caused by an acceleration and deceleration mechanism of energy transferred to the neck. It may result from rear-end or side impact motor vehicle collisions, but can also occur during diving and/or other mishaps. The impact may result in bony or soft tissue injuries (whiplash injury), which in turn may lead to a variety of clinical manifestations.5

Demographic Profiling

Incidences of cases per year and whom it affects most

In Canada, there are approximately 120,000 new whiplash cases per year at 3.8 whiplash cases per 1000 population.6

Sociodemographic indicators associated with poor outcome from whiplash are: older age, female gender, not in full-time employment, having dependents. Aside from the indicators just presented, longer recovery was also independently associated with the following signs and symptoms- neck pain on palpation; muscle pain; pain or numbness radiating from neck to arms, hands or shoulders; and headache.7

Neuro-Physiological Point of View for Whiplash

It is important for healthcare providers such as rehabilitation specialists, physical therapists, yoga therapists or other alternative healthcare practitioners to be able to educate patients with chronic WAD about the neurophysiology of pain. A study made regarding re-education of patient awareness of pain and its neurophysiology well-explained to them has led to the improvement in pain behaviour which then resulted in improved neck disability and increased pain-free movement performance and pain thresholds.8

Workshops provided by physiotherapist Neil Armstrong at Heaven On Earth Institute were quite useful. Neil Armstrong went into depth about the neurophysiology of pain, how it affects us, what it is telling us, to how we can change it through yoga therapy alternatives. In his article, *Yoga Therapy In Practice- Yoga for People in Pain*- he explains in detail how the nervous system produces pain then he follows up with common beliefs that people have about pain and discounts them so that we can learn more effective coping mechanisms. It is very important for healthcare practitioners to be aware of the above in order to accelerate healing time in patients.9

Whiplash Physiology

Whiplash is described as an injury most commonly occurring in the neck region. However, it is not really limited to the neck at all and can affect the back and other parts of the body as well. However, in this dissertation we will just discuss aspects of the neck.10

In an accident, the hyperextension and hyperflexion of the neck occurs upon collision with an object hit from behind or sideways. Hyperflexion experienced causes shortening of the muscles on the neck and throat as a reflex and works as a protective mechanism to protect the body. Symptoms experienced from whiplash can occur almost immediately, or take days, weeks or months to manifest completely. Sometimes people think they have escaped injury completely since they are symptom free for a while. However, when the symptoms manifest, rarely do they affect just the neck region- rather the whole body is affected as well after experiencing whiplash.11 Osteopaths were mentioned in an article that we researched on whiplash. An osteopath is a physician who is trained in the field of "osteopathic medicine." M.D. Doctors and Osteopaths are considered equal, legally, and in terms of their authority to diagnose and treat various health conditions, prescribe medications, and perform surgery. The difference between an MD and a DO is in the approach of the medical education. Osteopathic medicine emphasizes the whole person, and the connection between the musculoskeletal system and disease and symptoms. Osteopaths cover the same curriculum as MDs at osteopathic medical schools, plus, they receive an additional 300 to 500 hours of specialized osteopathic training, studying the musculoskeletal system.12

Osteopaths believe in 4 philosophical concepts regarding whiplash. They are as follows:

- The body is a functional unit- which means that a neck injury will experienced and adapted to by the rest of the body to retain its function.
- Structure governs function and function governs structure.
- The body is auto-regulating- which means that the body is self-healing and adapts and compensates for any injury to continue to enable function.
- The role of circulation is absolute meaning that circulation after injury is sometimes not optimal and may actually impose harm on some organs even

though the body is trying to protect itself. Impaired circulation may also cause metabolic toxic wastes to not be easily released from the body creating more stress on the body.13

As a result, we get the impression that the body needs to be treated as a whole even though the client has endured whiplash in the neck region because of the 4 concepts just mentioned. We believe the body does compensate and adapt to injuries as a whole therefore, we should treat it as such.

How Whiplash affects Everyday Living

From my own experience, I have learned that people who suffer from whiplash can be affected in the following ways:

- Tight shoulders and shoulder injuries
- Headaches
- Pain in the neck region that can be unbearable depending on whiplash severity
- Less energy
- Less mobility in the upper back
- Vertigo
- Increased stiffness from reaching overhead, picking up objects, stooping down to clean
- Lifting heavy weights to work out upper body- body pain increases easily and muscle tightness lasts longer than average
- Inability to stand/sit for long periods of time
- May take longer/impossible to do shoulder checks when driving due to pain and stiffness
- May experience pain and stiffness after running home errands like laundry and groceries
- · Less focus and concentration due to constant pain and stiffness
- Anxiety, Depression, Hopelessness
- Loss of Job

- Loss of Income
- Loss of Mobility
- Increased Blood Pressure

Contra-indications after whiplash are: any exercises that involve any pressure on the cervical spine, running, aerobics, lifting weights overhead, doing crunches while putting hands behind cervical spine to lift up off the floor, headbanging, treadmill due to impact, bad posture while sitting or standing.

Causes of Condition According to Medical View, and Holistic View, If Applicable.

According to the medical view, whiplash can cause the following:

The medical view states that whiplash can cause one of the following conditions in the cervical region:

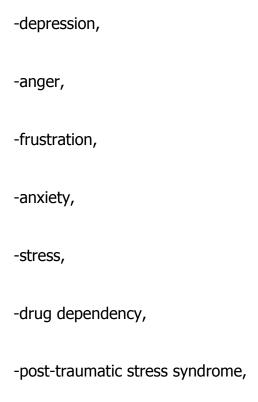
- 1) Bone vertebrae protecting the spinal cord can be forced or locked out of their proper misaligned position.
- 2) Muscles and ligaments (supportive tissues) can be stretched or torn during the force of whiplash.
- 3) Nerves that carry the body's messages, can get pinched or irritated.
- 4) Discs (shock absorbers) can bulge, rupture, or wear down.

Tension of neck muscles or relaxing them can still lead to whiplash and can increase the probability that the injury may be severe. Symptoms of whiplash are tension in the: neck, jaw, shoulders or arms, dizziness, headache, loss of feeling in an arm or hand, nausea and vomiting. Depression and vision symptoms are rare symptoms deriving from this.14

Primary and Secondary Symptoms of Whiplash experienced first-hand

Primary symptoms of Whiplash that I experienced were: headaches, neck pain and stiffness, jaw pain, back pain, dizziness, shoulder pain and stiffness, arm pain and weakness, visual disturbances, fatigue, reduced endurance, reduced flexibility. Primary symptoms are the physical impairments produced by whiplash. Secondary symptoms of Whiplash that I experienced at one time or another were- Depression, Anxiety, Arthritis, Insomnia, Anger, Weight gain, Medication Dependence, Social Withdrawal, reduction of self-esteem, loss of employment, bad posture, poor sleep, chronic pain, carpal tunnel, muscle imbalance, loss of ROM in back, muscle spasms, fainting spells, cognitive changes, impaired memory, inability to concentrate, difficulty and painful to hold positions for long periods. Secondary symptoms are the result of physical impairments caused by whiplash overtime.

After having seen others close to me endure either severe or a chronic case of WAD, symptoms that have been seen are:



- -sleep disturbance (insomnia),
- -slow speech
- -impaired memory
- -social isolation.

The Osteopath, Jack Eppel confirms some of the symptoms that other people and I have experienced by adding the following WAD symptoms below:

- Neck pain and restriction in shoulder, back or jaw.
- Numbness, pain, weakness or pins and needles in arms.
- Headaches.
- Difficulty swallowing.
- Anxiety, irritability, depression, inability to concentrate and fatigue.
- Eye disturbances (light sensitivity, blurred vision).
- Inner ear disturbances (dizziness, tinnitus, balance difficulties).
- Psychological disturbances (post traumatic stress, invasive thoughts of the accident, panic attacks, driving avoidance, sleep difficulties, fear of regarding injury)15

These WAD symptoms have been grouped into Syndromes and also into The Quebec Classifications to assist in diagnosis and treatment of WAD.

The 5 WAD syndromes just mentioned are as follows:

Cervical Syndrome – upper neck involvement (pain, restriction, tenderness, headaches),
 Cervico Brachial Syndrome – above mentioned symptoms + lower neck involvement + pain and altered sensations in the arms,
 Cervico Encephalic
 Syndrome – includes disturbances of balance, concentration, vision, dizziness, tinnitus,

fatigue, nausea, anxiety, and depression., 4. **Cervico Medullar Syndrome** – trauma to spinal cord (rare).16

The syndromes present a general layout of how the neck is involved and whether other body parts are involved and other symptoms. However, syndromes may show symptoms of other syndromes.

Regarding The Quebec Classification system for WAD, there are 5 grades as follows: Grade 0 involves no neck complaints or physical signs; Grade 1 involves neck pain and restriction but no physical signs; Grade 2 involves neck complaints and musculoskeletal signs; Grade 3 involves neck complaints, neurological signs and psychological distress; Grade 4 involves neck complaint and fracture.17

According to the holistic view from my research, WAD may cause disturbances mainly throughout the throat, heart and solar plexus chakras and organs or may even cause disturbances throughout the whole body since injury may have been severe to impact the whole body and thus all chakras and organs are indirectly/directly affected.

The body tightening up would cause chakras to close up, and energy to become disturbed and stuck leading to fatigue, depression, anxiety, other illness, circulation problems and other symptoms. The WAD victim may also experience feeling a loss of self since they will have lost their previous identity and are not capable to do what they may have been able to. Therefore, work on the solar plexus chakra is necessary to help improve self-esteem. Communication may be impacted and the WAD victim may stutter or not be sure on how to communicate anymore what their needs are. Yoga poses, diet and breath that free up these chakras and strengthen the organs involved in the chakras afflicted will help to reduce secondary and even primary symptoms brought on by WAD. This is important to help bring healing in WAD victims the holistic way.

Common Medical Treatments for WAD

Clients I know and I have experienced some or all of the following treatments for our condition as follows: botox injections, physiotherapy- ultrasound, laser, heat, Tens (transcutaneous electrical nerve stimulation) unit, chiropractor, massage therapy, nerve-block injections, steroid injections, aqua therapy, postural or ergonomic aids- therabands, cervical pillow, obus forme, occupational therapy strategies- energy conservation, task splitting, time-management, adaptations, psychological support, psychiatric, medication such as opioids, muscle relaxants, anti-depressent, anti-anxiety.

Alternative Natural Treatments for WAD

Clients I know and I, have pursued alternative treatments for pain relief, muscle strengthening and to increase and accelerate healing of injured cervical area caused by WAD by beginning/continuing: a yoga practice, physical training, acupuncture, acupressure, cranio-sacral, healthy diet modifications, meditation, continuous stretching, taking supplements to increase fibrocartilage and reduce joint pain, breath modifications to relieve stress and encourage more circulation to the entire body.

Yoga Therapy View- Chakra Focal Point of Condition

It is important to focus on the Throat, Hearth, and Solar Plexus Chakra when there is whiplash because a clients' prana may be stuck or not flowing smoothly in these areas. The Throat Chakra colour is blue and represents communication. It is located in the cervical region affected by WAD. The Solar Plexus Chakra colour is Yellow and represents confidence and empowerment and it is affected because it connects directly to the injured Throat chakra. In addition, the heart chakra is also since this chakra connects directly to the throat chakra and also because the body protective posture after WAD may cause the body to collapse the area around it. The Heart Chakra colour is green and represents love. As a result of affecting these chakras, digestion,

respiraton, speech, senses, and communication may be directly or indirectly related to WAD acquired.

Yoga poses that may be useful for a person with whiplash/WAD would be exercises that free the cervical spine, release the upper back and promote circulation in the upper extremities of the body without causing pain. Poses that open the solar plexus are helpful as well to boost confidence and feelings of empowerment. Heart opening poses are required to open up the heart chakra. It is absolutely necessary to not put any pressure in the upper back and neck region by pushing hands against neck when doing push-ups, by lifting weights overhead, by extending forward to reach often, or picking up often to ease tension and pain from whiplash.

Several yoga exercises specifically relax the upper back, neck and shoulders gently and without pain improving mobility and better function of those areas. Breathing exercises enable better lung function, better breathing, and a calmer state of mind. Meditation from yoga would enable the whiplash victim to be more aware of their present and how they feel and just enjoy being. This can lead to faster healing and improved emotional, psychological and mental well-being. Dietary modifications made for whiplash victims following the ayurvedic principles may also promote their healing through detoxification, better nutrition for their dosha type, and creating a more alkaline body thus, discouraging disease and cancer from taking over. As a result of all these yoga therapy modifications, the whiplash client will notice the significant improvement in their health and in their life that their lifestyle will change as well to one consisting of being present in the abundance that is around them. Whiplash clients will learn to live a happier life of simplicity recognizing the little things in life that bring happiness. They will be more open, present and thankful for the abundance that they have in their lives instead of constantly suffering from what-if the whiplash hadn't happened to me syndrome to what-will-happen to me syndrome. My focus would be to enable the whiplash client to recognize the new person he/she has become and to also recognize the beauty and authenticity they possess now and work with making that even greater.

Yogic Remedies For Condition

Assessment

Kapha-Pitta Zoila is a middle-aged retired woman and a stay-at-home mom. The Kapha in her leads her to accept what she has now even if she is not completely content with it sometimes. She simply lives in her days and accepts things as they are. Pitta in her drives her to work all hours of the day either cleaning the house, cooking for her family and providing 24-7 care for her down syndrome child. Sometimes she cannot sleep and usually she never gets a good night rest. The Kapha in her leads her to the love of food and to be tolerant of many situations that most people would not tolerate. She is very sociable and very easy to get along with. She suffers from diabetes and high blood pressure possibly caused by excessive wear and tear and attempting to meet excessive demands on a daily basis. She is also a people pleaser and strives to be liked by others.

Areas of Separation

She spends her days cooking, cleaning and watching over her husband and her adult down-syndrome child who has constant seizures and requires regular assistance and medication. When she's not doing house duties, or nurturing her husband, she is usually worn down completely, emotionally and physically. She recently had a car accident where she injured her back and suffered WAD again so her body is more stiff than usual and her energy has dwindled. In addition, she suffered whiplash from a previous accident which shaved part of her cervical spine disk and still causes her pain.

Physical- She is becoming more stiff and inflexible as the days go on due to her back injury and inactivity. Her legs and back are very tight. Her posture is suffering due to her heavy weight and injury. Her injury is becoming worse since

she is continually picking up her down-syndrome child and taking care of him since he is a heavy boy. She sometimes cries unexpectedly out of one eye possibly indication that her heart chakra has become affected and she may be forced to deal with repressed emotions from the past. She sometimes spends hours in front of the computer communicating with distant relatives and this is affecting her body negatively due to long holding positions and bad posture. She has postural misalignment due to compensation for her injury and due to her obesity issues. Her chest is collapsed and that must put pressure on her lungs and heart. Her abdominal organs are weak since she is obese and has not strengthened these muscles.

Udana, Prana, Samana, Vyana Vayus are affected and energy is stuck in these areas. These areas affect speech & senses, respiration, digestion and elimination respectively.

Energy-From constant bad posture due to shoulder and back guarding, her udana and prana are compressed and there is no flow of energy in these areas. The throat, heart and solar plexus chakras are closed.

Psycho-Emotional- She is constantly striving to satisfy her husbands' needs and everyone else around her since she is a big giver. She finds it difficult to express her emotions at home or anywhere since she believes no one really cares or will listen. Her outlet is in giving as much as she can, even sometimes more than she has to give herself. She gives unconditionally to her husband, her children, her friends without limit.

Wisdom-Her self-image is defined by her success as a mom, wife and friend. She believes her worth as a human being is directly affected by what she gives. "I am what I give to the universe".

Zoila's Reconnection Plan

Physical- Realign her posture by opening the areas surrounding the chakras that are closed. We would open up her throat, heart, and solar plexus chakras

with appropriate yoga poses for cervical spine and back injuries- allowing more prana to flow throughout. The abdominal areas will need to be strengthened with modified asanas for her condition also to help create support for her spine. At this time, she does exercise lightly with strolls around the neighbourhood and light stretches in the morning. Ideally, we will encourage her to gradually speed up her pace via speed walking to stimulate her Apana Vayu and enable her to digest and eliminate better and lose weight.

Energy- Open up the chakras in the chest area, heart, and lungs with appropriate yoga poses and pranayama. Strengthen chakras in the abdominal organs with appropriate asanas and pranayama and other activities such as swimming that may be helpful in bringing up her energy.

Psycho-emotional- Spend time doing a hobby and finding other ways to express herself through art, music, dance, tai-chi by taking classes.

Wisdom- Begin a meditation practice in order to help her realize that she is a part of the world but not defined by it. This would bring her into better self-awareness of her needs and wants as an individual and may help her in realizing what her limitations are in giving.

Bliss- Make an audio recording for her on Yoga Nidra so that she can be guided into meditation that will help her recognize that there is a higher power.

Personalized Program

Duration: 60-minute Yoga Therapy Session, from 1 day a week for 2 months to 5-6 days a week later on.

Pranayama- 5 minutes, sitting comfortably- select appropriate breathing technique like 3-part breath or alternate nostril.

Asanas- approximately 45 minutes

Bent-Legs Corpse- to relax body and mind.

Knee to Chest- relieves stiffness, misalignment and discomfort in lower back.

Lying Arm Raise with Bent Leg- gently stretch upper and lower back muscles. Promotes circulation to neck and shoulders.

Push Downs- strengthens entire abdomen.

Bent-Leg Hamstring Stretch- gently stretch hamstring. Prepares for numerous sitting, kneeling and standing poses.

Sphinx- emphasizes flexibility of upper back and strengthens arms, chest, and shoulders. Opens chest for deeper breathing.

Prone Resting Posture- to rest back after doing prone backbends like sphinx.

Locust (supported with pillow)- strengthens entire trunck including lower and upper back, neck, arms, shoulders, buttocks and legs. Increases Stamina.

Seated Poses

Seated Posture- supports and stabilizes the spine and encourages good sitting posture.

Seated Alternate Arm Raise- energizing and improves range of motion in shoulder joints.

Seated Arm Raise- improves ROM of and increases blood flow to the upper back and shoulders.

Shoulder Rolls- increases ROM in shoulder joints.

Wings and Prayer- to work the upper back and open the chest.

Mirror on Hand- to stretch your neck and upper back.

The Newspaper- to open the chest, lubricate the shoulders and promote circulation in the upper back.

Child's Posture- stretches lower back, relaxing it and loosening up tension.

Mountain Posture- improves posture and spinal alignment, creating stability in stance and facilitating breathing.

Standing Forward Bend with Chair- promotes circulation in upper torso and head. Stretches the entire back of body including neck, shoulders, hamstrings and back. Avoid this posture if it causes back pain.

The Tree- improves focus, concentration, balance, and stability. Increases flexibility of hips and adductors, and strengthens legs.

Bridge- promotes circulation to neck and shoulders while strengthening and stretching back, shoulders, hips, and thighs.

Bent-Leg Hamstring Stretch- gently stretch hamstring. Prepares for numerous sitting, kneeling and standing poses.

Lying Bent-Legs Twist- promotes circulation to your back. Tones abs. Feels great to those with stiff backs.

10-minute Corpse (Supported) with Eyes Covered- excellent for relaxation of body and mind. Soothes nervous system and facilitates deep rest.

Close to end- Seated Chair Twist and Sitting Fold- very gentle twist.

To bring balance and healing, she will be advised to do the sheetali breath for calming her nerves and she will be given a guided yoga nidra by me to help her relax each body part. She will be advised to do the breath and the yoga nidra once a day for now.

Diet is also important, therefore, she will be prescribed a diet that helps to decrease both kapha and pitta, brings her body to a more alkaline state to aid in her healing, and help her lose some weight. This way her vitality and strength will be restored and her healing encouraged.

She will also be guided into slowly changing or shifting her lifestyle into one of inner calmness, contentment and one full of abundance. She will be shown ways on how to become more self-aware of her needs and what her body is asking her so that she will learn to draw limits. She will be given then the mercy/source chart to guide her into 'being at her source' so that she will experience more happiness. We are hoping to break some past patterns that may have led to her slow healing and lack of health. We look forward to creating new behaviour patterns that will provide her with a better state of inner well-being and better health- more love for herself so that she can continue to give her love to those around her.

Other WAD programs may be devised/ broken down by WAD grades. For example, clients with grades 0-1 may be able to do neck rotations, but grade 2 WAD victims may not therefore, they will not be given those exercises. In addition, grade 4 victims may not even be able to move their necks due to possibility of fracture or other neurological disorders that may create long-lasting pain or injury. We can break these yoga sessions into grades however, that will create a book in itself to do that or take a really big portion of this dissertation to input that information. I was just making a point that treating WAD victims is not as easy as it seems to some. There are many factors to consider regarding the type and severity of the injury.

Conclusion from WAD Research

To summarize I chose to research WAD specifically because I have experienced WAD first-hand and have experienced many symptoms that I have researched. WAD does not include just the neck but can and does affect the rest of the body as well. When it does affect the rest of the body, all chakras are involved and disrupted. Therefore, it is important to treat the body as a whole not just as a part when helping people recover from WAD.

It is also important to recognize that WAD is not just a minor injury and that it can lead to all kinds of physical, mental, emotional and psychological complications and losses, secondary symptoms. People who have been affected by WAD may have had to change their lifestyle slightly, or entirely to accommodate the symptoms they are experiencing and avoid creating more physical harm to themselves. People who have experienced WAD should be carefully examined to see how severe their symptoms and injuries are before giving them treatment through yoga therapy. Also, it is very important to determine whether their doctor has approved them getting yoga therapy treatment.

If possible, different WAD levels should be separated into different groups for safety precautions and groups should be small. It is important to emphasize that yoga therapists should ensure that regulated healthcare practitioners have given their consent to their clients for future yoga practice and/or yoga therapy before commencing.

Overall, there is hope for recovering/ reducing the negative impact of WAD victims through alternative treatments- one being yoga therapy. Yoga therapy can contribute to the wellness of a WAD victim through specific asanas, breathing techniques, dietary modifications and meditative practice.

I look forward to putting my yoga therapy techniques into practice so that I can help others as myself to become more productive and reduce their pain in every way- be it physical, emotionally, psychologically, mentally whichever way they have been affected. I believe it is easier to help and understand others with WAD when you have experienced the same first-hand. Compassion and understanding comes easier to me after having experienced WAD and its repercussions. However, I believe that every experience is a learning experience and I have decided to grow from this one and help others.

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