

NECK & LB PAINS AS PREDICTOR OF PSYCHOLOGICAL STRESSORS AMONG UCAS PROFESSIONAL WORKERS

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Abstract

Background

Objectives. This study aims at realizing the prevalence of neck & LB pains among UCAS professional workers. It also investigates the level of psychological stressors that raised due to neck & LB pains among UCAS professional workers. Further, it inspects the difference between male & females in psychological stressors among the professional workers.

The study revealed that there is a high prevalence of Neck & LB pains amongst Workers in secretarial and administrative occupations. In addition, there is a high prevalence of psychological stressors raised due to neck & LB pains among UCAS professional workers in the sample of the study. Evidence suggests that these conditions are related.

Methods

A random sample of (95) administrators and secretaries of both sexes was selected. The researcher prepared and applied a measure of psychological stress on the sample. The study provided descriptive cross-sectional design.

Results

The researcher found that there is a high prevalence of Neck & LB pains amongst workers in secretarial and administrative occupations in the UCAS; in addition, there is a high prevalence of psychological stressors that raised due to neck & LB pains among UCAS professional workers in this population. Evidence from other researches suggests that these conditions are related to both males & females which conforms with the results in our study sample

Conclusions

These findings strongly support the need to consider both psychological and pain symptoms when providing assessments and treatment for adolescents. Further research is required to inform causal models.

Introduction

Neck & LB pain is a common global problem, and may constitute a significant source of psychological stressors. Musculoskeletal disorders in general have become increasingly common worldwide during the past decades. It is a common cause of work-related disability among workers with substantial financial consequences due to workers' compensation and medical expenses (Andersson, 1999). A study of 5424 children and adolescents by Perquin and colleagues (Perquin et al., 2000) found that over 50% had experienced pain in the last 3 months and that for a quarter of the sample the pain was chronic. The most common types of pain reported by adolescents are headaches, stomach, back, and limb-musculoskeletal pain with much comorbidity (Fichtel & Larsson, 2002). This study seeks to extend earlier

findings by examining the relationship between psychological stressors and the experience of back and neck pain in UCAS professional workers.

Research problems

Workers in secretarial and administrative occupations exposed to sitting in front of computer screens for long hours every day. Risk factors include repetitive work, prolonged periods of the cervical & back spine in flexion, high psychological job strain, which may lead to exposure to neck & LB pain and may have a negative impact on the psychological state of UCAS professional workers.

Study aims

This study aims at realizing the prevalence of LB & neck pains among UCAS professional workers. It examines the level of psychological stressors that raised due to neck & LB pains among UCAS professional workers. Further, it explores the difference between male & females in psychological stressors among the professional workers.

Study Question

1. What is the prevalence of LB & neck pains among UCAS professional workers?
2. What is the level of psychological stressors among UCAS professional workers?
3. Are there statistically significant differences between males & females in their exposure to psychological stressors that raised due to neck & LB pains?

Operational definitions

Neck pain: is a common complaint. Neck muscles can be strained from poor posture — whether it is leaning into your computer at work or hunching over your workbench at home. Wear-and-tear arthritis also is a common cause of neck pain. (MFMER, 1998-2013)

Low Back Pain (LBP): affects most every one at one time or another; up to 85% of people suffer at least one bout of LBP during their lifetime. (Lively MW,2002)

Psychological stressors:

It is a feeling of strain and pressure. Excessive amounts of stress may lead to many problems in the body that could be harmful. Stress could be something external and related to the environment.

Literature review

Korhonen et al., (2003) had investigated work related factors and individual factors as predictors for incident neck pain among office employees working with video display units (VDUs). The results demonstrate 34.4% annual incidence of neck pain. Additionally, they reported that Poor physical work environment and poor placement of the keyboard increased the risk of neck pain. Among the individual factors, female sex was a strong predictor. Smoking showed a tendency for an increased risk of neck pain. There was an interaction between mental stress and physical exercise, those with higher mental stress and less physical exercise having especially high risk. In addition, they concluded that in the prevention of neck disorders in office work with a high frequency of VDU tasks, they recommended that attention should be given to the work environment in general and to the more specific aspects of VDU workstation layout. Moreover, they suggested that physical exercise might prevent neck disorders among sedentary employees.

Cagnie et al., (2007) have studied individual, work related risk factors for neck pain among office workers, and the result was that 12-month prevalence's of neck pain in office workers was 45.5%. Multivariate analysis revealed that women had an almost two-fold risk compared with men (OR = 1.95). The odds ratio for age indicates that persons older than 30 years have 2.61 times more chance of having neck pain than younger individuals (OR = 2.61). Being physically active decreases the likelihood of having neck pain (OR = 1.85). Significant associations were found between neck pain and often holding the neck in a forward bent posture for a prolonged time (OR = 2.01), 21 often sitting for a prolonged time (OR = 2.06) and often making the same movements per minute (OR = 1.63). The results of this study indicate that physical and psychosocial work factors, as well as individual variables, are associated with the frequency of neck pain. These association patterns suggest also opportunities for intervention strategies in order to stimulate an ergonomic work place setting and increase a positive psychosocial work environment.

Siivola et al., (2004) estimated the prevalence and incidence of neck, shoulder pain in young adults, and tried to identify the associated and predictive factors of neck and shoulder pain based on 7-year follow-up. The result was in 7 years, the prevalence of weekly neck and shoulder pain increased from 17% to 28%. Among those who were asymptomatic at baseline, 6-month incidence of occasional or weekly neck and shoulder pain was 59% 7 years later. In an adjusted model, psychosomatic symptoms remained an associated factor for prevalent neck and shoulder pain 7 years later for both females and males. In females, neck and shoulder pain in adolescence was associated with prevalent neck and shoulder pain in adulthood, and sports loading dynamically in the upper extremities were an associated factor for a low prevalence of neck and shoulder pain 7 years later. In separate analyses of incident neck and shoulder pain, psychosomatic stress symptoms predicted neck and shoulder pain in adulthood. They concluded that in young adults, the incidence of neck and shoulder pain is high, and the associated factors of neck and shoulder pain are already multifactorial in a young population.

The 1-year prevalence of neck pain and possible risk factors among university academic staff were investigated by Chiu et al., (2002) using self-administered questionnaires were distributed to all the full-time academic staff in one of the universities in Hong Kong. The 1-year prevalence of neck pain was investigated. The relationship between individual factors, job nature, psychosocial factors, and neck pain were also analyzed. The 1-year prevalence of neck pain among an academic staff was 46.7%. A significant association was found between gender and neck pain ($p = 0.02$).²² The percentage of female academic staff with neck pain (62%) was higher than that in male staff (38%). This matched the results of other studies, which demonstrated that neck pain was more prevalent in women. There was a significant association between head posture during computer processing and neck pain ($p = 0.02$). Among those with neck pain during computer processing, 60.5% had a forward head posture. However, a low correlation between psychosocial factors and neck pain was demonstrated ($r = 0.343$). Academic staff in tertiary institutions could be considered as a high-risk group of job-related neck pain.

Barnekow-Bergkvist, (1998) studied the determinants of self-reported neck/shoulder and low back symptoms in general population and reported that in a 16 year follow up that high performance in bench press at the age of 16 was associated with a significant decrease in risk of neck/shoulder symptoms at the age of 34 in men, but not women. Women attain 50–80% of the neck strength of men.

A study conducted by Ostergren, (2001) concluded that job related mechanical exposure in both sexes, and psychosocial factors in women, seem independently of each other to play a part for development of shoulder and neck pain in vocationally active people. The effect of psychosocial factors was more prominent in women, which could be the result of biological factors as well as gender issues. These results suggest that interventions aiming at reducing the occurrence of shoulder and neck pain should include both mechanical and psychosocial factors

The experience of physical pain is also a common problem in this age group. A study of 5424 children and adolescents by Perquin and colleagues (Perquin et al., 2000) found that over 50% had experienced pain in the last 3 months and that for a quarter of the sample the pain was chronic. The most common types of pain reported by adolescents are headaches, stomach, back, and limb/musculoskeletal pain with much comorbidity (Fichtel & Larsson, 2002). Low back pain is very common in adolescence (up to 46% by the age of 14 years) (O'Sullivan PB,2008) and an organic cause is rarely found. The presence of this disorder in adolescence increases its risk for chronicity in adulthood (Hestbaek L,et al2006). In children and adolescents, neck and shoulder pain is also common (Murphy S,et al2007) and there is significant co-morbidity with back pain, especially in adolescents (Vikat A,et al2000). As with mental health problems, sex differences in reports of pain become apparent around puberty (Fillingim RB,et al2009). The study by Perquin and colleagues (Perquin CW,et al 2000) found that girls tended to report more chronic and severe pain than boys, particularly girls aged between 12 and 14 years. A study by Roth-Isigkeit, Thyen, Raspe, Stoven, and Schmucker (Roth-Isigkeit A,et al 2004) found the 3-month prevalence of any pain amongst adolescents aged 13-15 years or 16-18 years was significantly higher for girls than for boys. Sundblad, Saartok and Engstrom (Sundblad GMB,et al2007) conducted a study of Swedish students and examined the seven day prevalence of headache, abdominal and musculoskeletal pain. The authors found no difference in the prevalence of musculoskeletal pain between boys and girls but found that girls were twice as likely to report headache and abdominal pain. An earlier study by Mikkelsen, Salminen and Kautiainen (Mikkelsen M,et al1997).

A local research studied the occupational hazards among governmental healthcare workers in Gaza strip, it reported that slightly less than half of the study population (45.9%) complained of myalgia and arthralgia where female workers were affected three times more than male (Jouda, 2006).

Theoretical framework

Neck pain: is the sensation of discomfort in the neck area (Med Terms, 2008).

Epidemiology of neck pain:

Patient with neck pain represent the second largest population seeking manipulation or manual therapy (Muye et al., 2003). Neck pain is commonly encountered in clinical practice. The prevalence of neck pain with or without arm pain is approximately 13% of females and 9% of males in the general population. One out of every three individuals can recall an incidence of neck pain at least once in their lifetime. This percentage is greater in work place, where 51% to 80% of laborers can recall an episode of neck and arm pain. The frequency of neck complaints increase with age in the workplace. In the 25 to 29 age group, 25% to 30% complain of neck stiffness and 5% to 10% complain of pain radiating into the upper limb. In those over 45 years old, 50% complain of neck stiffness and 25% to 40% complain of pain radiating into the upper limb. Over all, 45% of working men have experienced at least one episode of neck discomfort (Randall et al., 2000).

Causes of neck pain:

Neck pain may originate from any of the pain sensitive structures in the neck include the vertebral bones, ligaments (anterior and posterior longitudinal ligaments) the nerve roots, the particular facets and capsules, muscles, and dura. Other structures of the neck region, visceral and somatic structures are encountered (Delisa et al., 1988).

Major and severe causes of neck pain include:

- Spondylosis: degenerative arthritis and osteophytes
- Spinal stenosis: a narrowing of the spinal canal
- Spinal disc herniation: protruding or bulging discs, or if severe prolapse.

The more common and less severe neck pain causes include:

- Stress: physical and emotional stresses can cause muscles to tighten and contract, resulting in pain and stiffness.
- Prolonged postures:- many people fall asleep on sofas and chairs and wake with sore necks.
- Poor posture: prolonged use of a computer keyboard.
- Minor injuries and falls:- car accidents, sporting events and day to day minor injuries.
- Referred pain: mostly from upper back problems.
- Over-use: muscular strain is one of the most common causes.
- **Obesity**: - weak abdominal muscles often disrupt the spine's balance, causing the neck to bend forward to compensate. Although the causes are numerous, most are easily rectified by either professional help or using self help advice and techniques (wikipedia, 2007).

Symptoms may include:

Neck soreness on one or both sides, burning pain, tingling sensations, stiffness, pain around the shoulder blades, Arm complaints (pain, numbness, or weakness), pain that moves around the body, dizziness and headache are the common symptom. Trouble walking or writing, trouble swallowing or talking, nausea, blurred vision, fever, night sweats, tiredness and unintentional weight loss are the less common.

(Spine universe, 2007)

Warning Signs:

Neck pain is one of the symptoms of meningitis, a relatively rare but very serious contagious infection; need urgent medical care if neck pain present with high fever, Sensitivity to light, irritability, and severe tenderness with neck movement.

Neck pain also can be due to injury. A severe neck injury could be life-threatening; may need medical treatment if neck pain present with numbness, weakness, and tingling symptoms (Spine universe, 2007)

Treatment of neck pain

Neck pain is treated by numerous physical therapies. They range in complexity depending on the severity and underlying causes of the pain. Treatment is administered by chiropractic, osteopathic and physical therapy. All of these specialties treat neck pain issues. The benefit of mobilization and manipulation is not clear (Gross et al., 2004).

Neck pain can also be eased via many self help techniques such as stretching, strength building exercises. Non-traditional methods such as Acupressure, Reflexology and therapeutic massage are commonly used as well (Hoving et al., 2002).

Neck pain and work related factors:

Almost two thirds of EU workers report being exposed to repetitive hand and arm movements and a quarter to vibrations from tools; significant risk factors for work-related neck and upper limb disorders. Many workers, in a wide range of jobs, develop work related upper limb disorders WRULDs and they are the most common form of occupational disease in Europe, accounting for over 45 % of all occupational diseases (OSHA, 2007).

LB pain

low back pain (LBP) affects most everyone at one time or another; up to 85% of people suffer at least one bout of LBP during their lifetime. (Lively MW,2002)

Causes of lower back pain:

Back pain is a symptom. Most back pain is musculo-skeletal in origin. Pain arising from other organs may be felt in the back. This is called referred pain. Many intra-abdominal disorders - such as appendicitis, aneurysms, kidney diseases, bladder infections, pelvic infections and ovarian disorders, among others - can cause pain referred to the back. Your doctor will consider this when evaluating your pain.

- Musculo-skeletal lower back pain is the most common cause of back pain. It is commonly caused by poor posture, twisting awkwardly, or incorrect lifting techniques.
- Nerve root syndromes are those that produce symptoms of nerve impingement (a nerve is touched), often due to a herniation (or bulging) of the disc between the lower backbones. Sciatica is an example of nerve root impingement. Impingement pain tends to be sharp, in one spot (or can radiate to other parts of the body as in the case of sciatica where pain may be felt down the leg) and associated with numbness in the area of the leg that the affected nerve supplies.
- Herniated, or slipped, discs are produced as the spinal discs degenerate or grow thinner. The jelly-like central portion of the disc bulges out of the central cavity and pushes against a nerve root. Intervertebral discs begin to degenerate by the third decade of life. Slipped discs are found in one-third of adults older than 20. However only 3% of these produce symptoms of nerve impingement.
- Spinal stenosis is an abnormal narrowing of the spinal canal. It can occur as intervertebral discs lose moisture and volume with age, which decreases the canal space. This coupled with disease in joints of the lower back, causes spinal canal narrowing. These changes in the disc and the joints produce symptoms and can be seen on an X-ray or scans. A person with spinal degeneration may have morning stiffness or pain while standing for a long time or walking even short distances. Even minor trauma under these circumstances can cause inflammation and nerve root impingement, which can produce classic sciatica without disc rupture.
- Cauda equina syndrome is a medical emergency. Disc material expands into the spinal canal, which compresses the nerves. A person experiences pain, possible loss of sensation and bowel or bladder dysfunction. This can include inability to control urination, causing incontinence, or the inability to begin urination.
- Musculoskeletal pain syndromes that produce lower back pain include myofascial pain syndromes and fibromyalgia.

- Myofascial pain is characterized by pain and tenderness over localized areas (trigger points), loss of range of motion in the involved muscle groups and pain radiating in a characteristic distribution but restricted to a peripheral nerve. Relief of pain is often reported when the involved muscle group is stretched.
- Fibromyalgia is a poorly understood condition defined as causing pain and tenderness on 11 of 18 'tender points' when touched, one of which is the lower back area, as described by NHS guidelines. Generalized stiffness, fatigue and muscle ache are reported.
- Other skeletal causes of lower back pain include osteomyelitis, sacroiliitis, and osteoporosis vertebral fractures. This pain is often worse at night and when sitting or standing for a long time.
- Tumours, possibly cancerous, can be a source of skeletal pain in the back.. (Rob, 2011)

Symptoms of Low Back Pain:

Symptoms of low back pain depend on the cause.

Back sprain or strain:

Symptoms generally include:

- Muscle spasms, cramping, and stiffness.
- Pain in the back and buttocks. It may come on quickly or gradually. It most often occurs in episodes. Certain movements make it worse, and resting makes it feel better. The worst pain usually lasts 48 to 72 hours and may be followed by days or weeks of less severe pain. It is very easy to reinjure your back during this time.

Nerve-root pressure:

Symptoms generally include:

- **Leg pain.** If pain extends below the knee, it is more likely to be due to pressure on a nerve than to a muscle problem. Most commonly, it is a pain that starts in the buttock and travels down the back of the leg as far as the ankle or foot. This pain pattern is known as sciatica (say "sy-AT-ih-kuh"). For more information, see the topic Sciatica.
- **Nerve-related problems,** such as tingling, numbness, or weakness in one leg or in the foot, lower leg, or both legs. Tingling may begin in the buttock and extend to the ankle or foot. Weakness or numbness in both legs, or loss of bladder and/or bowel control, are symptoms of cauda equina syndrome, which requires immediate medical attention.

Arthritis of the spine:

Arthritis of the spine usually causes pain that:

- Is worse in the back and hip region.
- Starts gradually, gets worse over time, and lasts longer than 3 to 6 months.
- Is generally worse in the morning or after prolonged periods of inactivity. Arthritis pain gets better when you move around.

Other conditions:

Symptoms of diseases that affect the spine depend upon the disease. They may include:

- Pain that is worse in the affected part of the spine (for instance, if there is a compression fracture, tumor, or infection).
- Pain that starts gradually, is constant, and may be sharp or a dull ache. Bed rest doesn't help and may make it worse (tumors on the spine often cause night pain). The pain lasts longer than 2 to 3 weeks.

- Fever.
- Sensitivity of the spine to touch and pressure.
- Pain that wakes you up from sleep. (Healthwise,1995-2012)

Prevalence

Low back pain is second only to upper respiratory illness as a cause for visiting a physician. (Andersson GBJ,1999) Up to two thirds of the population has low back symptoms at some time in their lives. In 1995 there were about two worker's compensation claims for low back pain for every 100 workers. Seventy-five percent of patients with acute low back pain are back to work within 1 month of the onset of symptoms, and only 5% are disabled for more than 6 months(Carey TS, et al1995) However, among those with continuing pain 6 to 10 weeks after onset, most still have some symptoms at 1 year (Wahlgren, 1997)

Among persons with chronic low back pain without neurologic deficits, a number of factors play a role in the length of disability. Recurrent low back pain and prolonged disability tend to correlate with prior history of low back pain, advancing age, job dissatisfaction, emotional distress, heavy or repetitive lifting and physical work, prolonged sitting or standing, and the presence of a worker's compensation claim or pending litigation (Shakelle,1977).

Lumbosacral radiculopathy and radicular low back pain are less common than nonspecific low back pain. L5 radiculopathy is the most common lumbosacral radiculopathy, usually produced by disk herniation between the fourth and fifth lumbar vertebral bodies. S1 radiculopathy is the next most common, followed by L3 to L4 radiculopathy.

Examination

A general examination should be performed to identify potential systemic disorders, such as rheumatologic disease, skin disease, or bone deformities. The spine should be inspected for alignment, curvature, range of motion, focal tenderness, and overlying skin abnormalities such as a tuft of hair or pore. Mechanical maneuvers to elicit radicular and hip-joint symptoms should be considered, including straight-leg raising, reverse straight-leg raising, Patrick's test, and Lasègue's sign.

A careful neurologic examination should be undertaken to exclude motor and sensory deficits. Muscle strength in the L2 through S1 myotomes should be examined. The sensory examination should include soft-touch and pain sensation in the same segmental distributions. Muscle stretch reflexes should be elicited at the knee for the L3 to L4 segment and at the ankle for the S1 segment, and they can also be performed in the posterior thigh at the tendinous insertion of internal hamstrings for the L5 segment.

Waddell and colleagues have also described a number of findings on the physical examination that point to nonorganic causes for low back pain, predicting delayed recovery and suggesting the need for a multidisciplinary approach to treatment (Waddell G,1980)

Acute Low Back Pain

Acute spine pain is very common, and the likelihood of spontaneous recovery is in the range of 80% to 90%. Prolonged inactivity prolongs recovery. Because there is seldom a recognizable structural cause, treatment regimens tend to be nonspecific.

Patient education is important, and part of the therapeutic effort should include patient education about the nature of the condition, the likelihood of a good outcome, and the approach to be taken to speed recovery and minimize the risk of recurrence. Once these approaches to management have been undertaken, if there is no meaningful response to treatment, it is necessary to explore the possibility that psychosocial issues underlie the symptoms.

Acute Nonspecific Back Pain

There is general agreement that patients with acute nonspecific spine pain or nonlocalizable lumbosacral radiculopathy (without neurologic signs or significant neurologic symptoms) require only conservative medical management. Patients should abstain from heavy lifting or other activities that aggravate the pain. Bed rest is not helpful and has been shown to delay recovery. (Malmivaara A,1995) Bed rest may be recommended for the first few days for patients with severe pain with movement. Recommended medications include nonsteroidal anti-inflammatory drugs such as ibuprofen or aspirin. If there are complaints of muscle spasm, muscle relaxants such as cyclobenzaprine may be used in the acute phase of pain. Narcotic analgesia should be avoided, in general, but it can be prescribed in cases of severe acute pain.

A study by Cherkin and coworkers compared standard physical therapy maneuvers and chiropractic spinal manipulation for the treatment of acute low back pain and found that both provide small short-term benefits and improve patient satisfaction, but they increase the cost of medical care and do not decrease the recurrence of back pain. (Cherkin DC, 1998) Although patients were somewhat less satisfied with reassurance and an education booklet (the third group in that study), this group fared no worse than the groups receiving therapy

Chronic Low Back Pain

When symptoms of spine pain extend beyond 4 to 8 weeks, the condition has moved from the acute to the chronic phase. At this point it is appropriate to reassess the patient's symptoms and examination. If no neuroimaging was performed in the acute phase of the illness, the need for studies at this time should be reassessed. In the face of true radiculopathy with new or worsening neurologic deficits, a surgical opinion should be considered. Depending on the full clinical picture, a number of alternative nonsurgical approaches may be considered at this point, although in general their efficacy has not been proved.

Chronic Nonspecific Back Pain

The standard approach to the patient with nonspecific chronic spine pain is physical therapy. By 3 to 4 weeks after onset of symptoms, unless there is serious underlying structural disease, there is no reason the patient should not be enrolled in an aggressive program of mobilization, postural improvement, and increased endurance. Yoga techniques provide useful stretching maneuvers that the patient can learn by video instruction. In the treatment of subacute and chronic spine pain, osteopathic physicians and chiropractors provide spinal manipulation techniques, such as thrust, muscle energy, counter-strain, articulation, and myofascial release. A study by Andersson and associates in patients with nonradicular lumbar spine pain of 3 to 26 weeks' duration compared a medical program that included physical therapy with a program that included active spinal manipulation. (Andersson GB,1999) At 12 weeks, there was no significant difference in the degree of improvement between the two groups, although the group that received manipulation required significantly less analgesia, anti-inflammatories, and muscle relaxants, and they used less physical therapy. More than 90% of the patients in both groups were satisfied with their care.

Summary

- Low back pain is usually caused by mechanical disorders of the spine, with or without involvement of the spinal nerve roots, but it may be a result of nonmechanical causes or may be referred from retroperitoneal sources.
- Diagnosis starts with a careful examination, followed by consideration for neuroimaging studies and electrodiagnostic studies.

- Specific management decisions are based on the duration of symptoms and the presence or absence of neurologic deficits.
- Chronic pain syndromes are often perpetuated by nonmedical factors. Treatment requires a multidisciplinary approach.

Psychological stress

In psychology, stress is a feeling of strain and pressure. Symptoms may include a sense of being overwhelmed, feelings of anxiety, overall irritability, insecurity, nervousness, social withdrawal, loss of appetite, depression, panic attacks, exhaustion, high or low blood pressure, skin eruptions or rashes, insomnia, lack of sexual desire (sexual dysfunction), migraine, gastrointestinal difficulties (constipation or diarrhea), and for women, menstrual symptoms. It may also cause more serious conditions such as heart problems.

Small amounts of stress may be desired, beneficial, and even healthy. Positive stress helps improve athletic performance. It also plays factor in motivation, adaptation, and reaction to the environment.

Excessive amounts of stress may lead to many problems in the body that could be harmful. Stress could be something external and related to the environment (Fiona Jones, 2001) but also may not be directly created by external events, but instead by the internal perceptions that cause an individual to have anxiety/negative emotions surrounding a situation, such as pressure, discomfort, etc., which they then deem stressful.

Stress responses

In terms of measuring the body's response to stress, psychologists tend to use Han Selye's general adaptation syndrome. This model is also often referred to as the classic stress response, and it revolves around the concept of homeostasis. According to the concept of homeostasis, in response to stressors the body seeks to return to its equilibrium state, or the normal level of stress resistance. During the alarm phase, the body begins to build up resistance to the stressor beyond normal resistance levels. Gottlieb, (Benjamin,1997)

During this phase the body mobilizes the sympathetic nervous system to meet the immediate threat. The individual's body reacts by releasing adrenal hormones that produces a boost in energy, tense muscles, reduced sensitivity to pain, the shutting down of digestion, and a rise in blood pressure. In the resistance phase the individual's body attempts to resist or cope with a persistent stressor that cannot be avoided. The physiological responses of the alarm phase continue and make the body much more vulnerable to other stressors. (Benjamin,1997)

The body continues building up resistance throughout the stage of resistance, until either the body's resources are depleted, leading to the exhaustion phase, or the stressful stimulus is removed. This three phase response is designed to help humans in life or death situations, but all types of stressors can trigger this response. A stress response results in elevated physiological arousal, often associated with the release of stress hormones such as cortisol. The physiological arousal in response to stressors is designed to help the body adapt quickly in order to survive and rid itself of the stressful stimuli.(Foley DL ,et. al 2006)

This physiological stress response involves high levels of sympathetic nervous system activation, often referred to as the "fight or flight" response. The response involves pupil dilation, release of endorphins, increased heart and respiration rates, cessation of digestive processes, secretion of adrenaline, arteriole dilation, and constriction of veins. This high level of arousal is often unnecessary to adequately cope

with micro-stressors and daily hassles; yet, this is the response pattern seen in humans, which often leads to health issues commonly associated with high levels of stress.(10)

Stress and health

As seen in the previous section, the physiological response to stress demands much of the body's energy and resources. This often has a great impact on disease and risk for disease. When the body's energy is used to respond to minor (or major) stressors, the immune system's ability to function properly is compromised. Ogden, J.(2007). This makes the individual more susceptible to physical illnesses like the cold or flu. Stressful events, such as job changes, (Greubel,et al2007)

Chronic stress and a lack of coping resources available or used by an individual can often lead to the development of psychological issues such as depression and anxiety (W,2011)

Studies have also proven that perceived chronic stress and the hostility associated with type A personalities are often associated with much higher risks of cardiovascular disease. This occurs because of the compromised immune system as well as the high levels of arousal in the sympathetic nervous system that occur as part of the body's physiological response to stressful events. (Margaret E. Kemeny,2003)

Stress prevention & resilience building

Although many techniques have traditionally been developed to deal with the consequences of stress considerable research has also been conducted on the prevention of stress, a subject closely related to psychological resilience-building. A number of self-help approaches to stress-prevention and resilience-building have been developed, drawing mainly on the theory and practice of cognitive-behavioral therapy. (Robertson, D: 2012).

Biofeedback may also play a role in stress management. A randomized study by Sutarto et al. assessed the effect of resonant breathing biofeedback (recognize and control involuntary heart rate variability) among manufacturing operators; depression, anxiety and stress significantly decreased. (Sutarto, AP;2012)

Types of stressors

A stressors is any event, experience, or environmental stimulus that causes stress in an individual. (Collins English Dictionary,2012) These events or experiences are perceived as threats or challenges to the individual and can be either physical or psychological. Researchers have found that stressors can make individuals more prone to both physical and psychological problems, including heart diseases and anxiety. (Pastorino, E. & Doyle-Portillo,2009)

Stressors are more likely to affect an individual's health when they are "chronic, highly disruptive, or perceived as uncontrollable". (Pastorino, E. & Doyle-Portillo, 2009) In researchers generally classify the different types of stressors into four categories: 1) crises/catastrophes, 2) major life events, 3) daily hassles/microstressors, and 4) ambient stressors.

Crises/catastrophes

This type of stressor is unforeseen and unpredictable and, as such, is completely out of the control of the individual (Pastorino, E. & Doyle-Portillo,2009)Examples of crises and catastrophes include: devastating natural disasters such as major floods or earthquakes & wars etc. Though rare in occurrence, this type of stressor typically causes a great deal of stress in a person's life. A study conducted by Stanford University found that after natural disasters, those affected experienced a significant increase in stress level. (Pastorino, E. & Doyle-Portillo,2009)

Major life events

Common examples of major life events include: marriage, going to college, death of a loved one, birth of a child, etc. These events can be either positive or negative. Research has found major life events are somewhat rare to be major causes of stress, due to its rare occurrences. (Pastorino, E. & Doyle-Portillo,2009)

The length of time since occurrence and whether or not it is a positive or negative event are factors in whether or not it causes stress and how much stress it causes. Researchers have found that events that have occurred within the past month generally are not linked to stress or illness, while chronic events that occurred more than several months ago are linked to stress and illness.(Cohen S, 1997)

Additionally, positive life events are typically not linked to stress—and if so, generally only trivial stress—while negative life events can be linked to stress and the health problems that accompany it. (Pastorino, E. & Doyle-Portillo,2009)

Daily hassles/microstressors

This category is the most commonly occurring type of stressor in an individual's everyday life. This includes daily annoyances and minor hassles(Pastorino, E. & Doyle-Portillo,2009)Examples include: making decisions, meeting deadlines at work or school, traffic jams, encounters with irritating personalities, etc. Often, this type of stressor includes conflicts with other people. Daily stressors, however, are different for each individual, as not everyone perceives a certain event as stressful. For example, most people find public speaking to be stressful, nevertheless, a seasoned politician most likely will not.

There are three major psychological types of conflicts that can cause stress. First, the approach-approach conflict occurs when a person is choosing between two equally attractive options, i.e. whether to go to see a movie or to go see a concert. (Pastorino, E. & Doyle-Portillo,2009) The second type is the avoidance-avoidance conflict, where a person has to choose between two equally unattractive options, for example, to take out a second loan with unappealing terms to pay off the mortgage or to face foreclosure on one's house. (Pastorino, E. & Doyle-Portillo, 2009)

The third type is an approach-avoidance conflict. (Pastorino, E. & Doyle-Portillo, 2009)This occurs when a person is forced to choose whether or not to partake in something that has both attractive and unattractive traits—such as whether or not to attend an expensive college (meaning taking out loans now, but also meaning a quality education and employment after graduation).

stressors

As their name implies, these are global (as opposed to individual) low-grade stressors that are a part of the background environment. They are defined as stressors **Ambient** that are "chronic, negatively valued, non-urgent, physically perceptible, and intractable to the efforts of individuals to change them". (Campbell, Joan,2013) Typical examples of ambient stressors are pollution, noise, crowding, and traffic. Unlike the other three types of stressor, ambient stressors can (but do not necessarily have to) negatively impact stress without conscious awareness. They are thus low on what Stokols called "perceptual salience".(Campbell, Joan,2013)

A literature review found that epidemiological research has shown a link between low back pain and psychological factors. Depression and anxiety are thought to be the most common psychological conditions associated with low back pain. The three components of low back pain are described as the somatic, the depressive and the social aspects. In relation to low back pain, depression is often described as being atypical as it takes the form of a so-called masked depression, often following a traumatic event. Individual psychological intervention is recommended as the primary treatment, with

medical treatment secondary. Different theories have been developed to explain the connection between chronic low back pain and depression, but none is comprehensive.

A study of Gestalt therapy and chronic pain reported that the most significant issue for the patient was to be understood. Individual psychotherapy was recommended with a view to understanding the patients' subjective experiences, since everyone experiences illness differently. The study showed, furthermore, that responses depended on the severity of the illness, family background and history, networks, social class and economic situation. Furthermore, the best results were seen in those who were willing to work with their own psychological process.

Given the substantial rates of mental health problems and the common experience of pain in this age group, and the possibility of a shared pathway for these disorders (Gatchel RJ,2007), the relationship between them has already been the subject of considerable research. A study by Larsson and Sund (Larsson B& Sund AM,2007) found that pain frequency was strongly related to levels of both internalising and externalising problems among adolescents irrespective of pain location. There are also sex differences in the experience of pain and associated mental health problems. In epidemiological studies, depressive and anxiety disorders have been associated with recurrent headaches and stomach aches in girls but not boys, while musculoskeletal pain has been related to depression in both sexes (Egger HL,et al1998). It is surprising that neck pain has not received the same amount of research attention as low back pain, given its high prevalence in the general population and in adolescent cohorts (Perry MC,et al 2008). Hogg-Johnston and colleagues (Hogg-Johnson S, et al 2009) conducted a best evidence synthesis of the burden and prevalence of neck pain and reported studies showing that poor psychological health both predicts and coexists with the experience of neck pain. In addition to this there is evidence that neck pain is specifically associated with depression (Carroll LJ,2004).

Furthermore, higher levels of distress are associated with stress biomarkers which are known to be related to spinal pain (Schell E, et al 2008) and muscle tension (Marras WS, et al2000).

Methodology:

The researcher used descriptive analytical cross sectional study to collect the data

Study Population:

The study population consists of all workers in occupation offices administrators and secretaries at the University College of Applied Science's of Gaza, The total number of the administrative and secretaries employees is 142 persons.

Study Sample:

A random sample was selected and consists of (95) of both sexes which work as administrators and secretaries, (67 males, 70.5%) and (28 females, 29.5%), and most of the employees spent on there offices duration (6 – 8) hours.

Study tool:

Psychological stressors scale:

The researcher applied the instruments of this study on a 22 pilot sample from the original population of the study sample, and they excluded from the study sample, where this technique used to estimate and discuss the validity and reliability of the instruments used in this study.

Table 1: Internal consistency of Psychological stressors scale items with its dimensions

Dimensions of psychological stressors	R. value	P. value
Psychological stresses	0.701	0.001***

Body stresses	0.790	0.001***
Social stresses	0.684	0.001***

*p< 0.05 **p< 0.01 ***p< 0.001

Reliability of the scale

To test the reliability of the Psychological stressors scale, the researcher used the following two methods: Split half method were reliability coefficient was (0.83), and by using Cronbach’s alpha equation where alpha coefficient was (0.86). The Psychological stressors scale measurement device is valid and reliable for data collection from the study sample.

Study results:

The researcher used some statistical equations to investigate and answer the study questions as the following:

Table 2: Prevalence of Neck pain and Low Back pain among the study sample

Variable	Response	No	%
Neck pain	Yes	77	81.1
	No	18	18.9
Low Back pain	Yes	77	81.1
	No	18	18.9

The prevalence of neck pain among the UCAS workers, the results indicated that UCAS workers with neck pain because of long sitting in front of computer screens represented 77 (81.1%).

The prevalence of LB pain among the UCAS workers , the results indicated that UCAS workers with LB pain as a result of long sitting in front of computer screen represented 72 (75.8).

Distribution of study population by average of number hours they work, showed that: nearly about half of study population 41 (43.3%) work for 7 hours.32 persons (33.7%) work for 8 hours ,while 8 (8.4%) persons work for 6 hours,4 (4.20) person work for 5 hours. 4(4.2%) persons work for 3- 4 hours, 4(4.2%)worked for10- 11 hours and 1 (1.1) work for 12 hour.

Table 3: means and stander deviation and ratio scale of the psychological stressors

N	Items	Mean	SD	Ratio scale	Rank
6	I wait eagerly for Vacations.	3.69	1.158	73.8	1
4	Pressures and burdens associated with neck and back pain make me feel upset	3.57	1.078	71.4	2
5	I feel distressed when I deal with the problems of neck and back pain	3.55	0.931	71.0	3
10	Neck or back pain caused me a lot of psychological pressure.	3.43	3.267	68.6	4
3	I feel tired when I wake up in the morning.	3.33	1.026	66.6	5
12	I feel frustrated because of the routine work I do every day.	3.15	1.203	63.0	6
7	I have a strong feeling that I am on the verge of collapse.	2.96	1.311	59.2	7
9	I have a desire to sleep in order to dispose of the problems of neck and back pain.	2.95	1.133	59.0	8
11	I feel upset when I talk about neck or back pain in front of others.	2.95	1.179	59.0	9
1	The activities which I do cannot achieve my ambitions and desires	2.88	0.966	57.6	10
15	I feel bored as long as I am in the same place	2.86	1.179	57.2	11
2	I feel that I am unable to remain in the activity that I do any longer.	2.82	1.072	56.4	12
14	I feel that the neck or back is the cause of my problems.	2.72	1.182	54.4	13
13	I feel that I couldn't improve my performance	2.61	1.179	52.2	14
8	I have no motivation to accomplish and improve my professional level	2.52	1.295	50.4	15
	Total	3.065	0.744	61.3	

As shown above in table 3 that the ratio scale of the total degree of psychological pressure is located at the level of 61.3 and stress levels ranged between ratio scale 50.4 to 73.8%. Paragraph 6 came in the top rank with ratio scale 73.3%, followed by 4 with relative weight 71.4%. In the third place came paragraph 5 with the ratio scale of 71%. The researcher found that the administrative work contributes to the kind of pressure as they exposed to sit for long hours every day in front of computer screens.

Our findings support those of Murphy and colleagues (Murphy S, et al, 2007) who found that low back, upper back and neck pain were all associated with emotional problems. Importantly, our findings also support and extend those of Watson and colleagues (Watson KD, et al 2003) who found that the experience of low back pain was strongly related to a variety of emotional and behavioral problems in a similar sized cohort of 11-14 year olds

Table 4: Body stressors

N	Items	Mean	SD	Ratio scale	Rank
2	I feel that I have a headache.	3.02	1.167	60.4	1
4	I feel that the burdens of life are beyond my endurance.	2.74	1.135	54.8	2
5	When I have a problem, I feel my blood pressure is rising.	2.72	1.173	54.4	3
7	I suffer from sleep disorders symptoms.	2.67	1.230	53.4	4
6	I have no ability to perform daily life skills	2.62	1.150	52.4	5
3	I get so tired quickly even when doing minor activities.	2.60	1.134	52.0	6
1	I feel that I have got a pain in my stomach.	2.59	1.195	51.8	7
8	I feel difficulty in moving.	2.47	1.114	49.4	8
	Total	2.68	0.817	53.6	

As shown above in table 4 that the ratio scale of the total degree of psychological pressure is located at the level of 53.6, and the body stress levels ranges between ratio scale 49.4 to 60.4. The item "I feel that I have a headache" comes at the top rank ratio scale of 60.4%, followed by "I feel that the burdens of life are beyond my endurance" with the ratio scale 54.8. In the third place comes the item number 5 with a ratio scale of 54.4.

The researcher thinks the neck or back pains and administrative work leads to headache and to the feeling of high blood pressure. In addition, this implant the feeling that the burdens of life are above their endurance.

This results agree with Watson and colleagues found associations between LBP and emotional, conduct and somatic complaints on the SDQ. For example, elevated scores on the Internalizing/Emotional problems scale of the SDQ is made up of five items (often complains of headache; often worries; often unhappy/tearful; often nervous/clingy; often fearful)

Table5: social stressors

N	Social stresses	Mean	SD	Ratio scale	Rank
5	I doubt my abilities in different social situations.	2.72	1.277	54.4	1
4	I feel discomforted when my friends do not co-operate with me.	2.61	1.661	52.2	2
3	I feel upset about not being able to fulfill my personal needs.	2.54	1.257	50.8	3
1	It worried me that others can achieve their work faster than I can.	2.39	1.164	47.8	4
2	I feel comfortable when I stay alone instead of being with others.	2.28	1.109	45.6	5
6	Direct contact with others causes me a sense of psychological tension.	2.22	1.231	44.4	6
7	I try to stay away from group sessions.	2.22	1.150	44.4	7
8	I feel turbulence because of the problems that others face.	2.20	1.251	44.0	8
	Total	2.43	0.795	48.6	

As shown above in table 5 that the ratio scale of the total degree of social stresses is located at the level of 48.6 .The social stresses levels ranges between ratio scale 44.0 to 47.8 came The item “I doubt my abilities in different social situations” comes at the top rank with the ratio scale 54.4%.It is followed by “I feel discomforted when my friends do not co-operate with me” with a ratio scale of 52.2. The item number 3 comes in the third place with a ratio scale of 50.8.

Table 6: Prevalence of neck pain among male and female

Variable	Male		Female	
	No	%	No	%
Yes	56	83.6	21	75.0
No	11	16.4	7	25.0

As we shown in table 6, **8 83.6%** males suffer from neck pain while 75% females suffer from neck pain.

Table 7: Prevalence of Low back pain among male and female

Variable	Male		Female	
	No	%	No	%
Yes	53	79.1	19	67.9
No	14	20.9	9	32.1

The above table shows that 79.1% males suffer from back pain while 67.9% females suffer from neck pain.

The researcher thinks that both males & females are nearly the same in the prevalence of neck pain, its likely to occur as they are suffering from neck and back pains which is a key factor in the presence of stress.

Table 8: T tests and differences between male and female in stressors

Variable	Sex	N	Mean	SD	T value	P. value
Psychological stresses	Male	67	46.04	11.121	0.173	0.863
	Female	28	45.61	11.468		
Body stresses	Male	67	23.31	7.256	0.821	0.414
	Female	28	24.64	7.041		
Social stresses	Male	67	19.01	6.623	1.234	0.220
	Female	28	20.82	6.213		
Total scores of stresses	Male	67	88.37	22.057	0.551	0.583
	Female	28	91.07	21.085		

As shown in the table 8, there were no statistically significant differences in total scores of stress and its dimensions according to the sex in the study sample.

The researcher found that the working methods for both sexes are the same and they also suffer from neck and back pains which is a key factor in the presence of stress so the result was that there was no statistically significant differences among members of the sample.

These results comply with another study which found no difference in the prevalence of musculoskeletal pain between boys and girls but found that girls were twice as likely to report headache and abdominal pain. (Mikkelsen, Salminen and Kautiainen (Mikkelsen M,1997)

Recommendation:

- providing range of advices and guidance for administrative and secretary workers to make them avoid neck and low back pain LBP problems
- Attempt to modify the physical environments for the UCAS workers
- Provide cognitive behavioral heuristic program to reduce the pressure arising from neck and back pain
- Practice a daily exercise program, specially walking because of its effects in reducing the factors causing neck and back pain,

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