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Medical Assignment

Question 1. Briefly discuss at least three key reasons why chronic medical conditions have a significant effect on health care service provision in the pre-hospital setting. (200 words)

1. Chronic medical conditions are those that are persistent and their effects are long lasting. Since most of them are long lasting, a growing number of evidences are greatly supporting the fact that prevention is helpful in bringing the effect of most of the chronic conditions to minimum level; especially, early exposure helps to avoid severe outcomes. (Kenkel DS)

2. Most of the chronic diseases don't have any definite and ultimate cure or therapy. The Clinical defensive services involve screening to identify the presence of chronic disease or tendency to its growth, therapy and vaccinations against contagious agents. Despite their usefulness, the exploitation of preventive services is quite lower than usual medical services as nothing is absolute or definite. In comparison to their visible cost in terms of money and time, the benefits of health care services are not straightly perceived by patient since their effects are long term and may be bigger for society at large than at individual level. (Kenkel DS)

3. Since many chronic medical conditions result in co morbidities, the health care service provision gets affected. Co morbidities are those conditions that result as the affect of one or more primary chronic diseases, for example, diabetes and cardiovascular disease. The health care provision doesn't remain same anymore as it were in case of a single disease. (Gerard Anderson)

Question 2. Identify two comorbidities (e.g. diabetes & cardiovascular disease) and discuss: (400 words)

1) How they interact and

2) How they affect the care provision for that person.

Co morbidities are the additional disorders or diseases in a person, in addition to any primary disease or disorder. Often, the commodities are the result of the affects of one or more primary disease. Sometimes, the primary disease associated with another existing disease in a human body and they both act as co morbidities. It has also been observed in many cases that one disease gives birth to another disease(s). If we talk about co morbidities; the most common are cardiovascular disease, diabetes, cancer and chronic pulmonary disease (Chillon et al., 2009). We will discuss the association between the co morbidities, chronic pulmonary disease and

diabetes as chronic pulmonary disease often overlaps or associated with other conditions such as diabetes, osteoporosis, hypertension etc.

1) How they interact: The study published in 2008 issue of the European Respiratory Journal (ERJ), revealed that a patient suffering from diabetes must also be tested for chronic pulmonary disease and some other respiratory problems. The study's findings also showed that patients suffering from severe form of chronic pulmonary disease increase the risk of having diabetes by 50%. Diabetes and chronic pulmonary disease are linked with significant cardiovascular profile. Among diabetic patients, cardiovascular disease is the first major cause of death while for those suffering from chronic pulmonary disease; cardio vascular disease is the second major reason of casualty. The disease of diabetes increases in severity with the growth of pulmonary disease, older age and Body Mass Index (BMI) of 30 kg/m² (Lavi et al, 2007)

2) How they affect the care provision for that person.

The treatment and care provision to the patients having co morbidities are actually a challenge for the health care sector. Usually, whatever care provision is made, it depends upon the severity of the case; however, since co morbidities present have different consequences in a body, the same goes with the medication and care provision. Often, doctors face the situation in which one drug that is beneficial to take during chronic pulmonary condition might have side effects in patients having diabetes as well. Chronic co morbidities also cost large sum of money. Sometimes, person has to consult more than one doctor as the doctors are specialists in specific field. The health sector also has a lack of affordable or available care for co morbidities. The care provision thus becomes a challenge not just for the doctors but for the patient as well.

Question 3. Discuss the systemic factors and the pulmonary factors that contribute to impaired functional capacity in chronic obstructive pulmonary disease (COPD). (400 words)

Chronic obstructive pulmonary disease bears several systemic and pulmonary factors behind that contribute to its impairment. Individuals suffering from chronic obstructive pulmonary disease (COPD) symptoms are at more risk of cardiovascular diseases, muscle wasting and osteoporosis. Systemic inflammation might also be associated with the pathogenesis of these kinds of disorders. (Wouters, E, F., 2002). A lot of studies have been carried out in order to conclude whether systemic inflammation is there in constant chronic obstructive pulmonary disease condition.

There is an increasing indication for systemic inflammation in COPD. Amplified circulating degree of acute phase proteins and inflammatory cytokines result in constant disease, and chronic obstructive pulmonary disease exacerbations are particularly connected to systemic and pulmonary inflammation. Negatively affected lung function or lungs' reduced functionality is

also the result of increased degree of systemic inflammatory mediators which can have significant therapeutic and pathophysiological implications for people with stable chronic obstructive pulmonary disease

Even though in chronic obstructive pulmonary disease, the inflammation occurrence is monitored and evaluated by the balance between anti and pro inflammatory mediators, but mostly emphasis has been given to pro inflammatory mediators. During exacerbation, though, regulation of anti inflammatory mediators also takes place. The major reason behind systemic inflammation chronic obstructive pulmonary disease (COPD) is remain to be clarified, though systemic hypoxia seems a candidate factor.

Several variable risk factors also contribute to grow chronic obstructive pulmonary disease (COPD). In around 80% to 90% of cases affected with chronic obstructive pulmonary disease, cigarette smoking has been identified as major underlying cause. In many studies, the primary smoking has been clearly established as the major cause. (Andreas S., Anker S.D., Scanlon P.D., Somers V.K., 2005)

Along with primary smoking, exposure to even second-hand smoke also plays a significant role. Another main factor is work-related exposure to smoke, dust such as coal dust, grain dust, industrial fumes etc. Hence work place environment is also a contributing factor.

Exposure to unseen dust is a great contributing factor to enhance the effect of smoking. Outdoor air pollution is connected with growing intensity of symptoms in patients having chronic obstructive pulmonary disease, including problems in inhalation. Frequent childhood contact to second-hand smoke and childhood respiratory infections also lead to diminished respiratory functionality, which may influence a person suffer from chronic obstructive pulmonary disease. A genetic shortage of alpha-1-antitrypsin that is an anti-protease, defending lungs tissues from any damage, is also linked with a higher level of chronic obstructive pulmonary disease risk.

Question 4. Briefly define iatrogenic disease.

- **consider three risk factors associated with iatrogenic disease,**
- **the consequences of those risk factors, and**
- **Their prevention in the older person. (400 words)**

Iatrogenic disease: Iatrogenic disease is one that results from medical treatment. It is an unintentional unfavorable effect or problem caused as a result of any medical advice or treatment, including that of therapists, psychologists, nurses, pharmacists, dentists and physicians. Iatrogenic disease is not confined to traditional medicine; rather it can also arise as a result of alternative and complementary medicine treatments. Some iatrogenic diseases are obviously defined and recognized, for example, a complication arises afterwards a surgical procedure. A number of less obvious ones can involve significant examination to recognize, like

complex medicines interactions. In addition, there are some conditions that are still being debated whether to be termed as iatrogenic disease or not. (Boscarino, JA, 2004).

- **consider three risk factors associated with iatrogenic disease:**

Iatrogenic diseases do not essentially occur due to medical errors, such as errors committed during surgery, or the dispensing or prescription of the incorrect therapy, like a drug. In fact, fundamental and sometimes unfavorable effects of a medicinal cure are iatrogenic. A very general iatrogenic effect results due to drug interaction. It means when a pharmacotherapist fails to verify for all drugs a patient is consuming and recommends new ones that act together antagonistically or agonistically (potentiate or reduce the projected therapeutic effect). Such conditions can cause major mortality. Unpleasant reactions, for example, allergic reactions to medicines, even when unanticipated by a pharmacotherapist, are also the risk factor for iatrogenic condition. The development of antibiotic opposition in bacteria is also iatrogenic. Bacteria damages resistant to antibiotics have emerged in reaction to the over consumption of antibiotic drugs. (Finland M, 1979)

- **the consequences of those risk factors,**

Erroneous medical treatments or surgeries result in adverse consequences, sometimes, of extreme severity. For instance, chemotherapy and radiation therapy, due to the desired aggressiveness of the remedial agents, repeatedly generate iatrogenic effects like hair loss, vomiting, anemia, nausea, brain damage, infertility, lymphedema etc. The failure of functions resulting from the necessary elimination of a diseased organ results in iatrogenic condition, for instance, iatrogenic diabetes emerges as a result of removal of either all or certain part of the pancreas. (Finland M (1979).

- **Their prevention in the older person**

The presence of iatrogenic disease in an older age has not been exactly reported. To identify older patients having higher risk is the primary phase in prevention since most of the iatrogenic diseases are avoidable. Interventions that may stop iatrogenic complications consist of particular interventions, the utilization of a geriatric interdisciplinary squad, pharmacist discussion and sensitive care for the aged units. (Schmitt R, Coca S, Kanbay M, Tinetti ME, Cantley LG, Parikh CR., 2008)

Citation:

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