Smoking and Substance Abuse

Supervised by: Prof. **Jamal Al-Jarallah**

Objectives:

- Epidemiology of smoking in Saudi Arabia
- Risks of smoking (Morbidity and Mortality)
- - Effect of passive smoking on pregnancy, children
- Helping the smoker to quit with smoking cessation aids and overcoming nicotine withdrawal symptoms
- Role of PHC physician "smoking cessation clinic"
- - Update of the smoking cessation medication in pharmacological management
- - Nicotine preparations, Varenicline, Bupropion,
- - Factors that lead to substance abuse
- - Highlighting types of substance abuse
- - Method to approach subjects with substance abuse

- Q1: the pharmacological nicotine replacement therapy that has the highest compliance is which one of the following?
- A) patches.
- B) pills.
- C) inhalers.
- D) sprays.

- Q2: Which on of the following is considered a Familial risk factor for substance abuse?
- A) Marital status of friend's parents (divorced).
- B) Child perception that parents approve of their substance use.
- C) Physical and Sexual Abuse.
- D) Depression and anxiety.

- Q3: After how many weeks nicotine cravings decrease ?
- A) 1 week
- B) 2 weeks
- C) 3 weeks
- D) 4 weeks

• Q4: What's the expected number of people dying because of smoking in 2030?

- A) 2 million
- B) 5 million
- C) 8 million
- D) 10 million

• Q5: tobacco smoking increases the risk of having

- A) Macrosomia
- B) Spina bifida
- C) Intrauterine growth restriction
- D) anencephaly

Objective 1&2

Epidemiology of smoking in Saudi ArabiaRisks of smoking (Morbidity and Mortality)

Epidemiology

- Tobacco harms the health, the treasury, and the spirit of Saudi Arabia. Every year, more than 7000 of its people are killed by tobacco-caused disease.
- It is recognized by the World Health Organization as the second leading risk factor for death worldwide.
- Despite its associated health risks, over **1.3 billion** individuals smoke tobacco worldwide

Epidemiology

- A latest study in Saudi Arabia among adults aged 18 years or older in 2018 showed that:
- Prevalence of cigarette smoking is **21.4%**

gender	Categories	%percentage	Total
Male	Daily Smokers	26.29%	32.5%
	Nondaily Smokers	6.19%	
Female	Daily Smokers	1.59%	3.9%
	Nondaily Smokers	2.34%	

Epidemiology

• Other study that done in 2015 and 2016 that show :

Adult Smoking (15+ Y.O.)

% using tobacco daily: 2015



Male **24.9%**

Even though fewer men smoke on average in Saudi Arabia than on average in very high-HDI countries, there are still more than 3295400 men who smoke cigarettes each day, making it an ongoing and dire public health threat.

Female

1.7%

Even though fewer women smoke in Saudi Arabia than on average in very high-HDI countries, there are still more than 157900 women who smoke cigarettes each day, making it an ongoing and dire public health threat.

Children Smoking (10-14 Y.O.)

% using tobacco daily: 2015

Boys

1.3%

Even though fewer boys smoke in Saudi Arabia than on average in very high-HDI countries, there are still more than 18200 boys who smoke cigarettes each day, making it an ongoing and dire public health threat.

Girls

0.18%

Even though fewer girls smoke in Saudi Arabia than on average in very high-HDI countries, there are still more than 2400 girls who smoke cigarettes each day, making it sign of an ongoing and dire public health threat.

Deaths

% caused by tobacco: 2016



Male

9.57%

Even though fewer men die from tobacco in Saudi Arabia than on average in very high-HDI countries, tobacco still kills 101 men every week, necessitating action from policymakers.

Female

4.94%

Even though fewer women die from tobacco in Saudi Arabia than on average in very high-HDI countries, tobacco still kills 34 women every week, necessitating action from policymakers.

Risks of smoking

• Tobacco use is one of the most important preventable causes of premature death in the world. More than 6 million people per year die from tobacco use across the globe.

• There are thousands of chemicals in cigarette smoke, including around 70 known cancer-causing chemicals called carcinogens. These carcinogens enter your bloodstream and are circulated through your body.



- Smoking harms nearly every organ in your body
- Lung cancer is the leading cause of cancer death in both men and women, and is one of the hardest cancers to treat.



Morbidity

- Smoking causes many diseases and reduces your health in general. It causes cardiovascular diseases such as heart disease, heart attack, heart failure, stroke and aneurysms.
- Even if you only smoke one cigarette a day it can have serious health consequences.
- Recent research has found that smoking just one cigarette a day has nearly half the risk of coronary heart disease and stroke compared to a 20-cigs-a-day smoker.

Smoking causes cancer

- Smoking causes cancer of the lung, mouth, throat, voice box, oesophagus, pancreas, bladder, kidney, liver, cervix, ureter, nose, nasal sinuses, stomach and bowel. Smoking also causes acute myeloid leukaemia and increases breast cancer risk.
- Lung cancer is now the leading cause of cancer death in the world. It has long been the leading cause of cancer death among men, and in many countries is now also the leading cause of cancer death among women, outpacing breast cancer.

smoking cause respiratory problems

- Chronic obstructive pulmonary disease (COPD) is one of the leading causes of death in the world.
- mortality from this condition is increasing in most countries; globally, 45% of all deaths from COPD are attributed to tobacco use.
- More women die from COPD than men.
- Types of (COPD) that smoking can lead to:
- 1. Chronic bronchitis
- 2. Emphysema

smoking cause cardiovascular problems

- Smoking tobacco damages your heart and blood vessels (cardiovascular system), increasing your risk of heart disease and stroke. It's a major cause of coronary heart disease, which can lead to a heart attack.
- Smoking causes high blood pressure, lowers your ability to exercise, and makes your blood more likely to clot.
- decreases HDL (good) cholesterol levels in the blood.
- Smoking is a major risk factor for peripheral arterial disease (PAD).

smoking cause reproductive system problems

For Men:

- Male smokers have a higher risk of sexual impotence (erectile dysfunction)
- Smoking can also affect sperm (which reduces fertility)

for women:

- Smokers are more likely to have an ectopic pregnancy
- Smokers are more likely to have miscarriages, stillbirths, babies with cleft lip or palate, and low birth-weight babies.
- smoking during pregnancy has also been linked to a higher risk of birth defects and sudden infant death syndrome (SIDS)

Mortality

Male

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Societal Harms

• The economic cost of smoking in Saudi Arabia amounts to 4545 million riyals. This includes direct costs related to healthcare expenditures and indirect costs related to lost productivity due to early mortality and morbidity.

Objective 3&4

- Effect of passive smoking on pregnancy, children
- Helping the smoker to quit with smoking cessation aids and overcoming nicotine withdrawal symptoms

Presented by: Khalid AlDakheel

PASSIVE SMOKING

What Is Secondhand Smoke (SHS)?

smoke that has been exhaled, or breathed out, by other person.

Is it Harmful?

Yes, regular exposure to secondhand smoke can cause cancer, heart disease, stroke, and lung problems in adults. The risk increases with the degree of exposure.

PASSIVE SMOKING

How to protect the passive smoker?

- 1. Recognize that everyone has the right to breathe air not contaminated with tobacco smoke
- 2. Recognize that all workers have the right to work in places where they are not exposed to the harmful effects of SHS
- 3. Increase consciousness that smoking harms not only the person who smokes but also those around him/her. This is especially important to protect people from exposure to SHS at home, where legislation has no effect
- 4. Legislate in favor of an individual's right to a smoke-free environment. Governments can legislate to protect people from involuntary exposure to tobacco smoke by establishing smoke-free public places and workplaces.

EFFECTS OF PASSIVE SMOKING DURING PREGNANCY

Second-hand smoke during pregnancy is very harm for both the mother and the baby.

Toxins in second hand smoke can cross the placenta and reach the fetus, affecting its blood circulation

and oxygen supply leads to

- 1) Miscarriage or premature delivery.
- 2) low birthweight
- 3) Sudden Infant Death Syndrome
- 4) learning or behavioral deficiencies in the child



Effects of passive smoking on children

The extent of effects of passive smoking on children is worse during the first 5 years of life where children spend most of their time with parents. Child's symptom severity related directly to how much smoke they are exposed to.

- 1. Ear infections
- 2. More frequent and severe asthma attacks
- 3. Respiratory symptoms (ex. coughing, sneezing, and shortness of breath)
- 4. Respiratory infections (bronchitis and pneumonia)
- 5. A greater risk for sudden infant death syndrome (SIDS)



helping the smoker to quit with smoking cessation aids :

- 1. Cold turkey.
- 2. Behavioral therapy.
- 3. Nicotine replacement therapy.
- 4. Medication
- 5. Combo treatments

Overcoming nicotine symptomes

Common withdrawal symptoms and ways to cope with them				
Symptom	Cause	Duration	Relief	
Craving for cigarette	Body's craving for nicotine	Most intense during first week but can linger for months	Wait out the urge; distract yourself; take a brisk walk.	
Irritability, impatience	Body's craving for nicotine	2 to 4 weeks	Exercise; take hot baths; use relaxation techniques; avoid caffeine.	
Insomnia	Body's craving for nicotine temporarily reduces time spent in deep sleep	2 to 4 weeks	Avoid caffeine after 6 p.m.; use relaxation techniques; exercise.	
Fatigue	Body adjusting to lack of stimulation from nicotine	2 to 4 weeks	Take naps; do not push yourself.	
Lack of concentration	Body adjusting to lack of stimulation from nicotine	A few weeks	Reduce workload; avoid stress.	
Hunger	Craving for cigarettes may be confused with hunger pangs	Up to several weeks	Drink water or low-calorie drinks; eat low-calorie snacks.	
Coughing, dry throat, nasal drip	Body ridding itself of mucus in lungs and airways	Several weeks	Drink plenty of fluids; use cough drops.	
Constipation, gas	Intestinal movement decreases with lack of nicotine	1 to 2 weeks	Drink plenty of fluids; add fiber to diet; exercise.	

Electronic cigarettes

What are they?

E-cigs are composed of a battery and a vaporization chamber that heats a liquid solution which contains glycerol, artificial flavorings and may or may not contain nicotine. The heated liquid becomes aerosolized and is inhaled.

E-cigarettes have evolved since first entering the market, with products now ranging from early 'first generation' devices that resemble cigarettes, to second and third generation devices that enable users to modify characteristics of the device, such as adjusting the voltage.

Electronic cigarettes vs traditional cigarettes

• Unlike traditional cigarettes, no combustion occurs, which means there is no exposure to tars or carbon monoxide with e-cig use.

 Analyses from small randomized clinical trials have shown reduced concentrations of formaldehyde and acetaldehyde (both carcinogens) in e-cigs compared to traditional cigarettes.

Are Electronic cigarettes safer than traditional cigarettes?

Can they be used as a smoking cessation aid?

- At present there is insufficient evidence to indicate if they are truly safer than conventional tobacco cigarettes.
- E-cigs are still not an FDA-approved smoking cessation aid, and the United States Preventive Services Task Force lists the evidence for therapeutic use of e-cigs as inconclusive.
- Health authorities should act to minimize harm to users and bystanders until evidence of safety, quality and efficacy can be produced.

The World Health Organization has stated that "no specific figure about how much 'safer' the use of these products is compared to smoking can be given any scientific credibility at this time."

Complications/Side effects of using electronic cigarettes

- E-cigarettes are not likely to be risk free, and may expose users to chemicals and toxins at levels that have the potential to cause health effects. Such as propylene glycol, glycerol or ethylene glycol, which may form toxic or cancer-causing compounds when vaporized.
- E-cigarettes may also expose users to metals such as aluminum, copper, lead and nickel.
- Most common symptoms reported by those passively exposed to e-cigarettes included respiratory difficulties, eye irritation, headache, nausea and sore throat or throat irritation.

Electronic cigarettes exposure in mice

- Thus far, studies in mice have demonstrated that initial short-term exposure to aerosolized nicotine vapors resulted in increased pulmonary endothelial inflammation, oxidative stress, and an increased susceptibility to bacterial pneumonia and influenza A, compared with mice not exposed to aerosolized nicotine.
- Additionally, exposure to nicotine vapors during early life in mice led to decreased lung growth compared to mice raised in ambient air.

Electronic cigarettes use in non-smokers

There is some evidence from studies to suggest that e-cigarette use in non-smokers is associated with future uptake of tobacco cigarette smoking.



- - Role of primary health care physician in smoking cessation
- Update of the smoking cessation medication in pharmacological management

Presented by: Omar Qattan
Role of primary health care physician in smoking cessation

- CONSULTATION MODELL
- (STOTT &DAVIS)
- MANAGEMENT OF PRESENTING
- PROBLEM
- MODIFICATION OF HELP SEEKING
- BEHAVIOUR
- MANAGEMENT OF CONTINUINGPROBLEM
- **OPPORTUNISTIC HEALTH PROMOTION**

- A clinician can make a significant impact on a tobacco user. Clinicians can address the social, financial, and emotional issues surrounding tobacco use, in addition to the health impacts associated with use.
- The question is how?

Five Major Steps to Intervention (The "5 A's")

Successful intervention begins with identifying users and appropriate interventions based upon the patient's willingness to quit. The five major steps to intervention are the "5 A's": Ask, Advise, Assess, Assist, and Arrange.

1.Ask

Identify tobacco use status for every patient at every visit.

2. Advise

- In a clear, strong, and personalized manner, urge every tobacco user to quit.
- Ways to do this
- Remind them of the consequences to their health
- Inform them that children who's parents smoke are more likely to smoke

3. Assess

- Is the tobacco user willing to make a quit attempt at this time?
- By asking them what their plan is or what is stopping them from quitting

4. Assist

- For the patient willing to make a quit attempt
- Use
- Pharmacotherapy
- Smoking Cessation Clinic

5. Arrange

- Schedule follow-up contact, in person or by telephone, preferably within the first week after the quit date.
- Or referral

Smoking Cessation Clinic

- Assessing the smoker referred from other clinics or walking by taking medical History, measuring Height and White, Measuring the lung functions by the Spirometer.
- Counseling the smokers by a Physician to cut down the number of cigarettes gradually.
- Prescribe nicotine replacement treatments for the smokers or other drugs.
- Follow up with the Quit smokers to avoid any relapses.

https://ngha.med.sa/English/MedicalCities/AlAhsa/P HC/Divisions/Pages/SmokingCessationClinic.aspx

Anti-Smoking Clinics

- Overview:
- The Anti-Smoking Clinics is an initiative meant to facilitate access to therapeutic services and integrate these clinics with other healthcare providers to ensure a standard high-quality service for all beneficiaries.
- Vision:
- Achieving a global standard of tobacco-use treatment.

Anti-Smoking Clinics

Mission:

The initiative aims at providing the best preventive and therapeutic services through qualified skilled staff to the largest possible number of those willing to quit smoking, in line with the Saudi Guide for Tobacco-Cessation Services. It also aims to raise the service efficiency standards to the local, regional and global best with commitment to continuous improvement. https://www.moh.gov.sa/en/Ministry/Projects/TCP/P ages/default.aspx

Why are these programs important

- 1. It show the importants of quitting smoking and the patient will notice this
- 2. Specialized
- 3. Save lives

Pharmacological management

- 1. Nicotine Replacement Therapy ,some over the counter
- 2. Varenicline tartrate
- 3. Bupropion hydrochloride

prescription only

Nicotine replacement therapy (NRT)

- Skin patches (also called "transdermal nicotine patches"). These patches are placed on the skin, similar to how you would apply an adhesive bandage.
- Chewing gum (also called "nicotine gum"). This gum must be chewed according to the labeled instructions to be effective.
- Lozenges (also called "nicotine lozenges"). You use these products by dissolving them in your mouth.







- Nicotin Preperation, Verenicline, Bupropion.
- Factors that lead to substance abuse

Presented by: Nasser AbuDujain

Most Common Non- NRT

- The Most Common Non- NRT are:
- Bupropion
 Verenicline

• Othe types that used as Non- NRT: Nortriptyline, Clonodine, SSRIs, Naltrexone

Bupropion



- Non NRT's, (Bupropion) Is an antidepressant medication which helps reduce nicotine withdrawal symptoms and urges to smoke.
- Inhibits reuptake of dopamine, noradrenaline, and serotonin in the central nervous system, and a non-competitive nicotine receptor antagonist.
- Contains no nicotine; can be used safely with nicotine replacement products. It is available for prescription use only.
- Known as Wellbutrin or Zyban
- Side effects:

Insomnia, Changes in appetite, Seizures. - Dry mouth

- Contraindications:
- Epilepsy Pregnancy Breastfeeding Young < 18 years

Verenicline



- Non NRT's (Varenicline) Is a selective nicotinic receptor partial agonist, blocks effects of nicotine from cigarettes if the user starts smoking again.
- Known as Chantix
- Contains no nicotine
- It is available for prescription use only.
- Side effects:
- - Psychological effects, Nausea. Headache, Sleep disturbances.
- Contraindications:
- Pregnancy Breastfeeding Young < 18 years

Substance Abuse



 Substance abuse, also known as drug abuse, is a patterned use of a drug in which the user consumes the substance in amounts or with methods which are harmful to themselves or others, and is a form of substance-related disorder. Widely differing definitions of drug abuse are used in public health, medical and criminal justice contexts.

Substance Abuse



 In addition to possible physical, social, and psychological harm, use of some drugs may also lead to criminal penalties, although these vary widely depending on the local jurisdiction

1-Familial Risk Factors:



- A- childhood maltreatment (including abuse and neglect).
- B- parental or familial substance abuse.
- C- marital status of parents (divorced).
- D- level of parental education.
- E- familial socioeconomic status.
- F- parent-child relationships.
- G- child perception that parents approve of their substance use.

2-Social Risk Factors

A- **Deviant peer relationships**: where in an adolescent associates with a group of people who use substances.

B- Peer pressure and popularity: Specifically, when adolescents believe that their popularity within a peer group increases with the use of substances.

C- **Bullying**: All adolescents who participate in bullying, whether they are the perpetrator, the victim, or a combination of both roles, have been shown to have increased risk of mental health disorders and psychosocial problems when compared with those who do not participate.

D- Association with gangs: Specifically, higher rates of alcohol and marijuana use have been reported among gang members than among those who are affiliated with a group of deviant peers.

3- Individual Risk Factors

A. Attention deficit hyperactivity disorder (ADHD)

B. Anxiety and depression



4-trauma

A. **Physical and Sexual Abuse:** Males are more likely to be physically abused, whereas females are generally more likely to be sexually abused

B. **Neglect**: It is also more likely that females' relationship with their parents or conflict within the home will be linked to their choice to use substances than males

C. Post-traumatic stress disorder (PTSD)

Objective 9&10

- - Highlighting types of substance abuse
- - Method to approach subjects with substance abuse

Presented by: Faisal Habbab

1- Alcohol:

A colourless volatile flammable liquid which is produced by the natural fermentation of sugars and is the intoxicating constituent of wine, beer, spirits, and other drinks.

Side effects: Slurred speech, Drowsiness, Vomiting, Diarrhea, Upset stomach, Headaches, Breathing difficulties, Distorted vision and hearing, Impaired judgment, Decreased perception and coordination, Unconsciousness, Coma, Blackouts.

2- Central Nervous System Depressants:

Medications that slow brain activity, which makes them useful for treating anxiety and sleep problems. (Barbiturates, Benzodiazepines)

Side effects: Drowsiness, slurred speech, poor concentration, confusion, dizziness, problems with movement and memory, lowered blood pressure, slowed breathing.

3- Cocaine:

A powerfully addictive stimulant drug made from the leaves of the coca plant native to South America.

Side effects: Narrowed blood vessels, enlarged pupils, increased body temperature, headache, abdominal pain and nausea, euphoria, increased energy, insomnia, restlessness, anxiety, violent behavior, panic attacks, paranoia, psychosis, heart attack, stroke, seizure, coma.

4- Heroin:

An opioid drug made from morphine, a natural substance extracted from seed pod of opium poppy plants.

Side effects: Euphoria, dry mouth, itching, nausea, vomiting, analgesia, slowed breathing and heart rate.



5- Marijuana (Cannabis):

Made from Cannabis sativa. The main psychoactive (mind-altering) chemical in marijuana is delta-9-tetrahydrocannabinol, or THC.

Side effects: Enhanced sensory perception and euphoria followed by drowsiness/relaxation, slowed reaction time, problems with balance and coordination, increased heart rate, problems with memory, anxiety

6- Opioids:

Pain relievers with an origin similar to that of heroin. Opioids can cause euphoria and are often used nonmedically, leading to overdose deaths. Side effects: pain relief, drowsiness, nausea, constipation, euphoria, slowed breathing, death.



7- Inhalants:

Solvents, aerosols, and gases found in household products such as spray paints, markers, glues, and cleaning fluids; also nitrites (e.g., amyl nitrite), which are prescription medications for chest pain.

Side effects: Confusion, nausea, slurred speech, lack of coordination, euphoria, dizziness, lightheadedness, hallucinations/delusions, headaches, death from asphyxiation, suffocation, convulsions or seizures, coma, or choking

Substance misuse screening:

Single-question screen:

"How many times in the past year have you used an illegal drug or used a prescription medication for nonmedical reasons?"

Hazardous use :

Brief counseling: using a motivational interviewing approach in the clinical setting has been shown to decrease the quantity and frequency of drug and alcohol use.

During counseling, the physician elicits the patient's own reasons for change, rather than telling the patient why he or she should change.

Physician should avoid Confronting or pushing the patient to change as its usually not successful and can decrease motivation for change.

Substance abuse:

• **Substance abuse** is characterized by the development of consequences from substance use, and these consequences can serve as motivators for change.

- Principles and techniques derived from **motivational interviewing** can be used to manage resistance and increase readiness to change.
- For patients with substance abuse, experts generally recommend advising abstinence
- For patients who are not committed to abstinence harm reduction strategies is an appropriate alternative .
- Harm reduction strategies reduce the **negative health consequences** of substance use for example:
 - providing clean needles to persons who continue to inject drugs. Avoid driving while intoxicated.

Substance dependence:

Substance dependence is a chronic relapsing and remitting illness, Patients require chronic care approach that can include:

- Pharmacotherapy
- Referral to specialty treatment
- Mutual help meetings
- Ongoing counseling and care coordination.

• Engage family members in the treatment plan as family support is important in the recovery process.

Motivational interviewing

The aim of motivational interviewing is to empower and motivate individuals to take responsibility and change their substance use behavior.

Stage 1: Understanding why they need to change
Stage 2: Planning and making the changes
Stage 3: Maintaining the change
Approaching substance abuse

Stage 1: Understanding why they need to change.

- Help the person explore their desire to change.
- Do they want to change?
- Do they need to change?
- What can the health-care provider do?
- **Step 1:** Give feedback about the person's personal risk or impairment (e.g. how is the substance use harming them/impacting on them and how it is harming others?).
- **Step 2:** Encourage them to take responsibility for their substance use choices.
- **Step 3:** Ask them about the reasons for their substance use.
- **Step 4:** Ask about both the perceived positive and negative consequences of their substance use.

Approaching substance abuse

Stage 2: Planning and making changes Supports the person to make changes

- **Step 1:** Ask them about their person goals for their future. Support them to explore whether their substance use is helping them reach those goals or not?
- **Step 2:** Discuss the reasons, consequences, benefits, harms and goals the person has so they gain a deeper understanding of how their substance use is impacting on them.
- **Step 3:** Discuss realistic changes the person could make to change.
- **Step 4:** Support them to enact that plan. Arrange a follow up session with them so you can see how that plan is going and make necessary changes to it if they have lapsed.

Approaching substance abuse

Stage 3: Maintaining the change. The person has achieved the change they want but it can be easy to lapse or relapse and start using old patterns of behavior.



MOTIVATIONAL INTERVIEWING

https://www.youtube.com/watch?v=T_iB bEr5e4M

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