

Lecture 1 (Placebo)

- Placebo (latin means **for shall pleas**): An inactive **substance or preparation** (may be a surgery) given deliberately to satisfy the patient's symbolic need for drug therapy and used in controlled studies to determine the efficacy of a medicine and to describe an adequate control, it is a procedure with **no** intrinsic therapeutic value.
 - Observer – oriented definitions (broader definitions): placebo is any treatment which is effective through symbolic rather than instrumental means, any thing offered with therapeutic intent may be a placebo, so it is an active ingredient in practically every prescription.
(مريض اكتئاب أخذ أسبيرين وتحسن ~< ال placebo ممكن يكون دوا حقيقي)
- The placebo effect: the changes produced by placebos that may or may not occur and which may be favorable or unfavorable. It may be viewed as a subset of a larger group of mind-brain-body effects such as the psycho- immunological effects of religious beliefs, cultural and social systems.
- Placebo is intended to act through psychological mechanism, BUT its effect may be either psychological or physical.
- The negative connotations of placebo:
 1. The placebo effect is a neglected and berated asset of patient care.
 2. The more the doctor viewed medical practice as a scientific exercise, the more disparaging he was about placebo therapy.
 3. Due to the improvement of medical science, doctors suggest that the placebo is an inert preparation, which has little or no specific medical effect and is given to humor rather than cure. This definition imply that the practitioner knowingly exploits such technique to gratify the patient.
- Due to the improvement in medical sciences in the last 40 years, the medical community disdains the use of placebo and is trying to get it out of the way to prove the efficacy of the therapeutic agents they use, despite this, placebos are there front and center.
- The display of sympathy is now more often the province of alternative medical practitioners.
- When people go to doctors they expect a prescription, so the doctor may give them placebo even though they don't need any medication to improve their relationship with patients.
- Placebo can't be used every time rather than the real medication ~> for the patients not to lose their trust in the doctor, its effectiveness is about 35% and some cases placebo can't be used with (cancer, sever Parkinson).
- Placebo effect is not entirely psychological (it may work by conditioning).
- How big is the placebo effect:
 - About 75% of the apparent efficacy of antidepressants may be attributable to placebo effect.
أدوية الإكتئاب بدها بالمتوسط شهر عشان تشتغل، إذا المريض تحسن مباشرة بعد استخدامه ~< placebo effect
- In many studies, sugar pills have done as well as or better than antidepressants.
- Wolf and Pinsky (1954) found that 30% of 31 anxiety patients improved on placebo(lactose).
- DuBois (1946) said that placebo is more used than any other class of drugs.
- Many effective drugs have power only a **little** greater than that of placebo.

- In study on patients undergoing dental procedures, patients who were given placebo with reassured had the **least discomfort** among both who were given placebo and were told nothing and who were given a real anesthesia without reassuring.
- world average of for placebo effect in peptic ulcer= 36% (USA is close to it), Germany=59%, Denmark and the Netherlands=22%, Brazil=7%.
- The total drug effect = its active effect + its placebo effect, the placebo effect of active drug is masked by their active effects. So, the power attributed to Morphine is presumably a placebo effect plus its drug effect.

- 75% of a group of severe postoperative pain are satisfactorily relieved by large doses of Morphine while 35% are relieved by placebo.
- Researchers from the university of British Columbia that found that co dopamine is released in the brain after an injection of a placebo if the patient **expect to get the drug**, other researchers found that patients with Parkinson's disease who were given placebo released dopamine in their brain like those who were give active drug.
- study in arthroscopic knee surgery, matched against sham surgery, 2 yrs later 35% of pts said they felt less pain.

So, what counts more in reality is what is going in the mind not the pharmacological effect.

- The effect of placebo may decrease with time.
- Honigfeld shows that doctors communicate a subtle enthusiasm to patients in clinical trials and clinical situation.
- Factors in placebo effect:
 1. The relationship between the patient and the doctor (the most important), allowing the transfer of the patient concerns to the physician.
 2. Beliefs of both the patient and the doctor about the medication. Physicians who have faith in the efficacy of their treatments are the most successful in producing positive placebo effect.
 3. The psychological state of the patient, the patient expectation and conviction affect his response to treatment wether active or placebo.
 4. The length of time spent with the pt. and the demeanor of the physician.

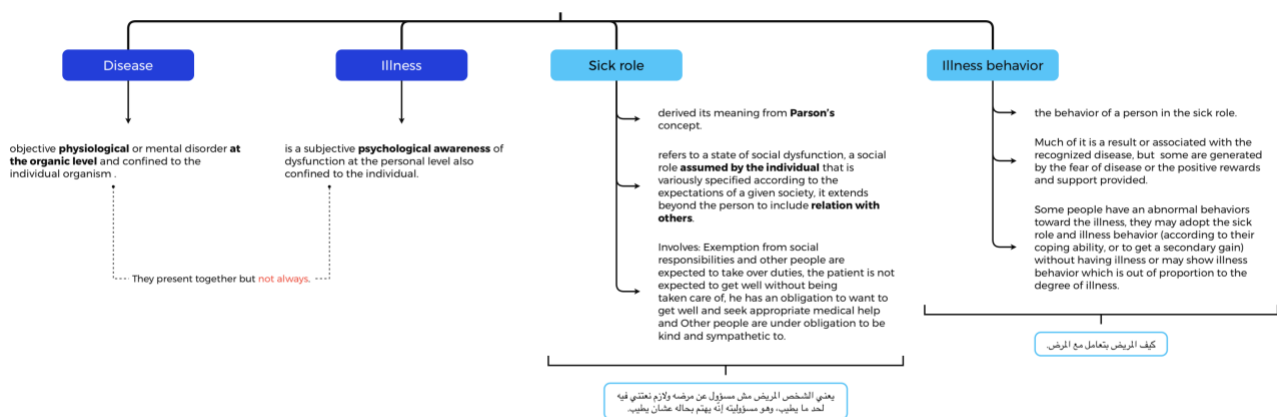
(المريض بحس أنه الدكتور مهتم عنجد وشاطر وبقتنع إنه الدوا إلي رح يعطيه ياه منيح فبعطي فعالية أفضل)

Lecture 2 (The sick role and illness behavior)

- William Osler: "The good physician will treat the disease, but the great physician will treat the patient". "It is more important to know what kind of a patient has a disease than what kind of disease a patient has".
- Francis W. Peabody: "Patients are human beings with very human hopes and fears. In the hospital, they have been removed from their accustomed environment. Their valuables and their clothes have been taken away from them, and they feel "miserable, scared, defenseless, and, in their nakedness, unable to run away".
- Stress (Hans Selye): the inability to cope with a physical or emotional threat. Through stress, the brain can kill the body.
 - Three stages of physical changes occur when exposed to stress:

1. Alarm: fight or flight response ~> nervous and endocrine systems activated for defense against stressor.
2. Resistance: continued high alert~> hormones helpful in alarm stage now become counterproductive increasing risk for disease.
3. Exhaustion: body unable to cope.

- Biopsychosocial model~> we have three important factors, biological (genes are the most important factor), social (environment) and psychological (personality, emotional well being) factors.
- Signs: objective manifestations of a disease process (rash, high blood pressure). الإثشي ألي بنشوفه.
- Symptoms: subjective experiences (pain or other form of distress). الإثشي ألي يشكي منه المريض.
- Healthy individuals develop a new physical symptom every 5 - 7 days, 95% of these symptoms are never brought to the attention of a doctor.
- Why symptoms lead to medical visit: Intensity and duration of the disease, change in presentation, family history (there is a family cases of cancer for example), previous experience, unfamiliarity (الأعراض أول مرة بتصير معه), perceived threat and loss of control.
 - The presence of symptoms is not enough for most people to visit the doctor.



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- A basic principle in learning theory is that patterns of behavior which are rewarded tend to increase in frequency, so not all who consult doctors with somatic symptoms have objective evidence of disease. Probably these patterns have been trained to do so under stress since childhood.

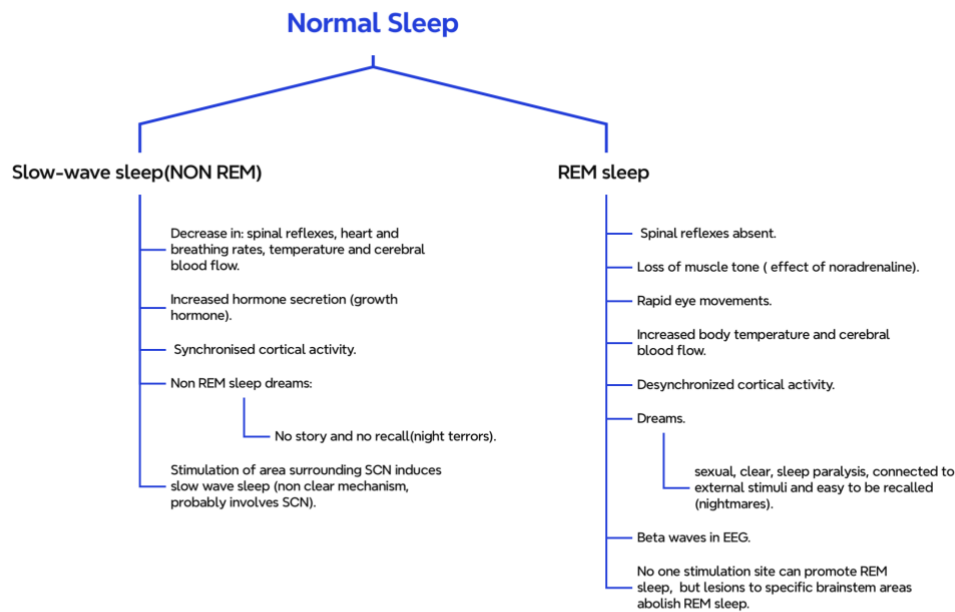
Lecture 3 (circadian rhythm and sleep)

- Homeostasis: maintenance of equilibrium by active regulation of internal states (cardiovascular function (blood pressure, heart rate), body temperature, food and energy regulation and fluid regulation).
 - When the normal level (set point) is changed (hyper- or hypo-), feedback from the brain is generated to return to normal state.
 - Multiple mechanisms control homeostasis, which emphasizes the importance to survival.
 - Set points are not fixed, many homeostatic functions show daily rhythms. Maintain levels appropriate for the level of activity therefore, efficient in energy use. ~> these

functions are in a certain balance but not fixed in the same rhythm, for example during sleep, body temperature, Heart rate and respiration rate decreases, so energy is conserved.

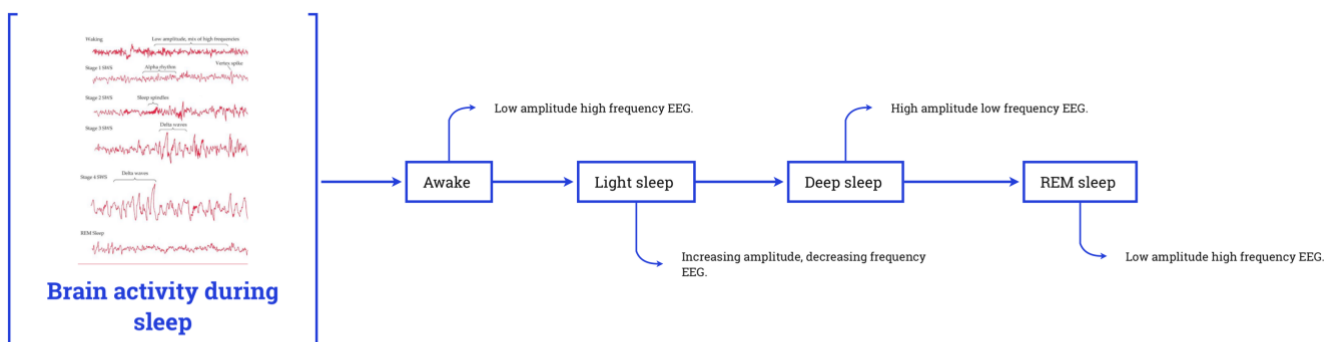
- Many functions show natural biological rhythms (biorhythms):
 1. Circadian rhythms (daily cycle) ~> body temperature, heart rate, respiration, sleep.
 2. Circannual rhythms (yearly cycle) ~> Hibernation, mating behavior, migration.
 - These biorhythms are linked to light/dark cycle and season (day length probably critical).
- **Circadian rhythms:**
 - linked to day length (light/dark cycle).
 - Light/dark information affect body systems by:
 1. Optic tract:
 - lesion ~> periodicity changed. circadian rhythm maintained even in constant light.
 2. **Suprachiasmatic nucleus (SCN):**
 - Located in hypothalamus, above optic chiasm. Its cells show oscillations of activity related to circadian rhythm, form the biological clock.
 - Many functions (sleep wake cycle) are maintained in constant light or constant dark. In normal light/dark cycle SCN rhythm is phase locked to **light dark**.
 - Periodicity may not be 24 hours.
 - Lesion: no periodicity, circadian rhythm abolished.
 - Many non-mammals have photoreceptors outside the eye, where the light reaches the SCN trough (for example pineal gland is light sensitive in the amphibians and reptiles).
 - In mammals there is direct pathway from eyes to SCN, rods and cones do influence SCN function, if rods and cones are absent light sensitive information still reached through other light receptors that also present in eye.
 - Free running sleep rhythm: circadian rhythm about 25 hours (normally, Circadian rhythms are 24-hour cycles, so free running sleep rhythm is a disorder).
 - Entrainment to light dark cycle maintains a 24 hr periodicity, mediated through SCN activity.
 - Jet-lag (**Extra:** a disorder happens when traveling across different time zones) ~> there is a rapid shift in light dark cycle. Takes a few days for endogenous rhythm to re-entrain.
- Bremer (1930) ~> when the midbrain is surgically separated from the forebrain in cats, it remained permanently asleep, so in the absence of sensory input, the cortex became quiescent (sleep).
- Moruzzi & Magoun ~> electrical stimulation of the midbrain woke sleeping animals. Lesions in this area caused persistent sleep.
- **Activation of the midbrain ~> activation of the cortex.**
Lack of tonic activating influence of midbrain ~> cortical neurons cease firing, and sleep.
 - 5HT inputs inhibit midbrain (activating system areas) ~> promotes slow wave sleep.
- **Normal sleep:**

- Sleep is a complex combination of different aspects.
- consists of 1-4 series of phases of increasing depth (Non-REM) and one REM phase. Each phase has a characteristic EEG.



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- Sleep length decreases with age.
- In the first sleep cycle: 15-20 minutes to fall a sleep (the sleep onset latency), over the next 45 min, one descends to stage 3 & 4(non-REM), 45 min after stage 4, reaches the first REM stage.
- REM latency: how much time is needed to start the rem cycle ~> 45+45=90.
- As the night progresses: REM period gets longer, stage 3+4 gets shorter until they disappear. Further into the night sleep, it becomes lighter, and dreams become more.
- At the beginning of the night, deep sleep is more. At the end of the night, REM sleep is more, and between them it is a light sleep.



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- Electroencephalographic (EEG) recordings showed abundant neuronal activity in cortex during sleep (not passive neuronal quiescence).

- Pattern of the EEG was very different in sleep than in waking. Waves of activity indicates synchronous firing of cortical neurons (synchronizing stimulus coming from sub-cortical areas).
- Reticular formation is important.
- Neurotransmitters:
 1. 5HT (serotonin receptor) ~> inhibition of activating system, promotes slow wave sleep.
 2. Noradrenaline ~> inhibition of muscle tone during REM sleep.
 3. Acetylcholine ~> induces REM sleep.
 4. Dopamine ~> general arousal.
 5. sleep-promoting substances (factor S, DSIP (delta-sleep inducing peptide), melatonin) ~> not much known about their action.
May modulate circadian rhythmicity rather than sleep per se.
- Disorders of sleep:
 - Dyssomnia: اضطرابات في نوعية النوم
 - Parasomnia: مشاكل بتيجي مع النوم
 - Often associated with anxiety, psychological disturbance or drug taking.
 - Little known about causes.
 - Limited capacity for pharmacological treatment of sleep disorders.
 - **Insomnia**: reduction or absence of sleep. transient or persistent (acute for less than 3 months or chronic).
 - Correcting of chronic insomnia through **sleep hygiene** (conditioning) ~> wake up in the morning at the same time, no alarm snoozing, sunlight exposure as early in the day as possible, don't sleep through the day (except 15-20 minute maximum), no caffeine after 5pm, no smoking in the one hour before sleep, don't use the phone while trying sleeping, use the bed for sleeping only (using it for other things prevents the conditioning between the bed and onset of sleep).
 - **Hypersomnia (narcolepsy)**: excessive drowsiness and falling asleep.
 - **Sleep-wake schedule disturbance** (transient or persistent).
 - **Partial arousal** (sleepwalking, nightmares).

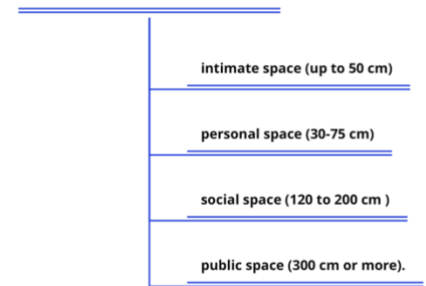
Lecture 4 (Communication skills)

- Communication: process of transferring information from one entity to another. It is the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs.
 - Communication is a two-way process, in which there is an exchange and progression of thoughts, feelings or ideas towards a mutually accepted goal or direction. There are a sign-mediated interactions between at least two agents.
 - It is one of the words that is most hyped in contemporary culture.
 - It includes a large number of experiences, actions and events, happening and meanings and technologies.
- major parts in human face to face communication:
 1. body language (55% of impact) ~> postures, gestures and eye contact.
 2. tone of voice (38%).

3. content or words (7%).
- Nonverbal communication~> communicating by other ways than using words, such as by:
 1. Paralanguage (the voice sounds).
 2. Kinesics (facial expressions, eye contact, posture, and gestures).
 3. Image (clothing, objects, and appearances).
 4. proxemics (spatial relationships).
 - Ideas and feelings are communicated by more than the words.
 - Becoming aware of nonverbal signals helps individuals improve ability to control these elements in their own communication. They can also become more skilled at interpreting nonverbal cues, which enhances their comprehension of the total message.
 - The interpretation of much nonverbal communication is **culture dependent**.
 - **Eye Contact:**
 - Eyes are the most expressive element in face-to-face communication.
 - Among North Americans: who maintains direct eye contact is considered to be open, honest, and trustworthy. Shifty eyes suggest dishonesty. Downward gaze may be a sign of submission, inferiority, or humility.
 - **Gestures:**
 - interpretation of gestures depends on the situation and the culture.
 - Some hand gestures are recognized and easily interpreted.
 - For North Americans: circle formed with the index finger and thumb ~> satisfaction. Shaking the index finger ~> warning. Showing the palm ~> peaceful greeting. Crossed arms mean "I will not let you in". Rubbing the nose with a finger ~> disapproval. Patting the hair ~> approval. forming a steeple with the fingertips ~> superiority.
 - **Posture:**
 - The way individual stands and hold their body sends messages about self confidence.
 - Stooped or bowed shoulders may signal that the individual burdened, self conscious, lacking confidence, submissive, beaten, guilty, or afraid.
 - A straight back with squared shoulders typifies strength and responsibility.
 - Hunched shoulders suggest anxiety or weariness.
 - **Image (Appearances):**
 - The image an individual projects and the objects surrounding that person can communicate nonverbally.
 - Clothing can tell about an individual's status, occupation, self-image, and aspirations. It communicates a nonverbal message indicating worth, integrity, and trustworthiness.
 - If you look successful, you are often perceived to be successful.
 - Possessions (يعني ترتيب المكان) send messages about the occupant's status, work habits, personal habits and interests, education, and personality traits.
 - **Proxemics:** the amount of space that individuals maintain between each other.

- Individual resent when their territorial space invaded.
- Business conversations~> place in personal or social space, but never in intimate space.
- Meetings~> public space.

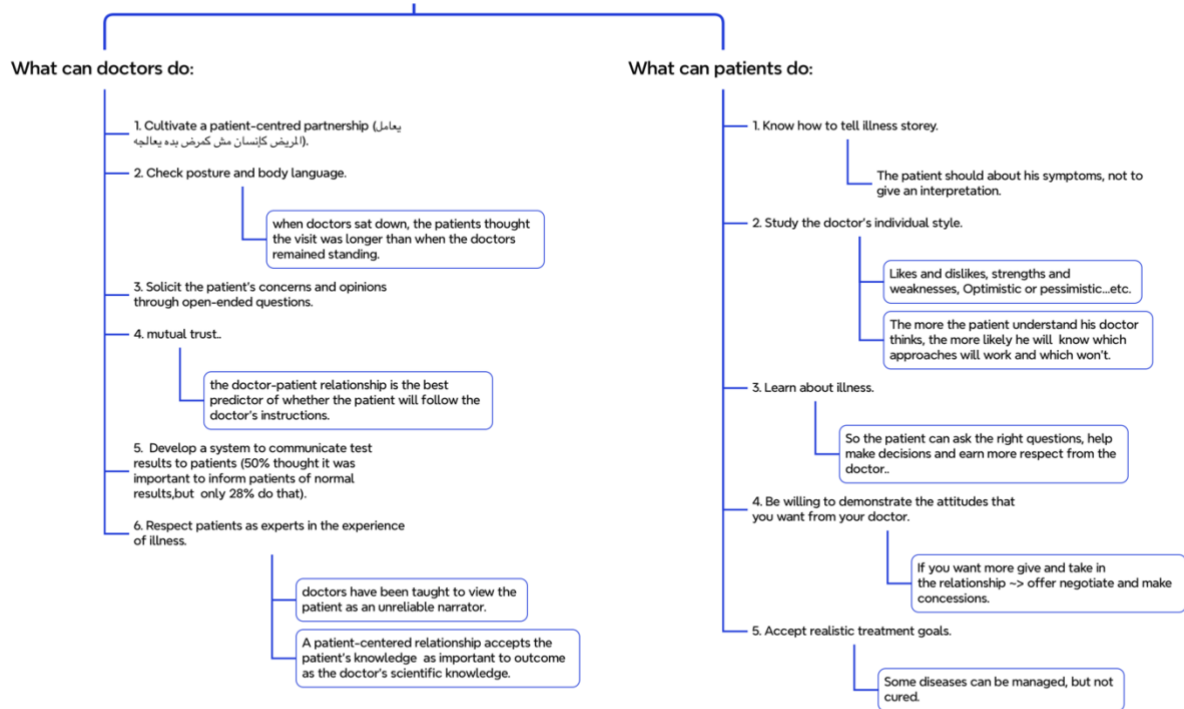
territorial zones (by Sociologists):



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- Communication skills: art or technique of persuasion through the use of oral language and written language. It is the ability to use language (receptive) and express (expressive) information (Verbal Communication). They are the events and tasks specifically designed to improve communication.
 - It includes non-Verbal Communication such as the lip reading, finger- spelling and sign language.
 - Every platform for communicating is a communication event. Including:
 - Formal meeting, seminars, workshops, trade fairs.
 - The communication media (radio, TV, newspapers).
 - The communication technologies (pagers, phones).
 - The communication professionals (advertisers, journalists, camera crew).
- **The Doctor-Patient Relationship:**
 - It is central to the practice of medicine and is essential for the delivery of high-quality health care in the diagnosis and treatment of disease.
 - It forms one of the areas of contemporary medical ethics.
 - Rapport (the presence of trustworthiness) maintains a professional relationship with patients, uphold patients' dignity, and respect their privacy.
 - patient must have confidence in the competence of their doctor.
 - Psychiatry and family medicine emphasize the doctor- patient relationship more than pathology or radiology.
 - openness, trust and good communication, enable the doctors to work in partnership with patients, to address their individual needs.
 - To fulfill your role in the doctor-patient partnership: be polite, considerate and honest, treat patients with dignity, treat each patient as an individual, respect patients' privacy and right to confidentiality, support patients in caring for themselves, encourage patients who have knowledge about their condition to use this when they are making decisions about their care. (GMC Good Medical Practice (2006))
 - The GMC have stressed the importance of doctors developing good communication skills.
 - The effect of using communication skills effectively by doctors: Patients' problems are identified more accurately, patients are more satisfied and can better understand their problems, patients are more likely to comply with treatment or lifestyle advice, patients' distress and the vulnerability to anxiety and depression are lessened, the overall quality

of care is improved by ensuring that patients' views are taken into account, patients are less likely to complain and fewer clinical errors are made. Doctors also benefit, their own wellbeing is improved, and there is a reduced likelihood of doctors being sued.



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- **Personal barriers to effective communication:**
 1. lack of skill and understanding ~> failure to understand the importance of using clear and simple language, giving structured explanations and listening to patients' views and encouraging two-way communication.
 2. Undervaluing the importance of communicating ~> not appreciating the importance of keeping patients adequately informed.
 3. Negative attitudes by doctors towards communication ~> due to their concern primarily to treat illness rather than focus on patients' other needs which may be psychological or related to social wellbeing.
 4. A lack of inclination to communicate with patients ~> due to a lack of time, uncomfortable topics, lack of confidence and concerns relating to confidentiality.
 5. Human failings (tiredness and stress).
 6. Inconsistency in providing information (by different healthcare providers).
 7. Language competence.
- **Organizational barriers to effective communication, which are outside the doctor's control, such as lack of time, pressure of work and being subjected to interruptions.**

- Subject areas of effective communication skills: breaking bad news, consulting patients and relatives, dealing with angry, difficult and reluctant patients, demonstrating empathy, giving and receiving information, explaining and negotiating skills.
- many of doctors are forced to rely on intuition to guide them as to what to say or how to say things to patients.
- Doctors must review their skills as part of continuing professional development and take part in educational activities as a means of maintaining and further developing their competence.
- The Lothian University Hospitals NHS Trust has asked patients for their views on communication issues. They found that:
 - 60% complained about a lack of involvement in decisions about their care.
 - 60% said they were given no information about resuming normal activities after treatment.
 - 46% said they were given inaccurate information about how they would feel after treatment.
 - 43% said their home situation was not considered at discharge.
 - 33% said they had been given no explanation of test results.
 - 31% said they had no opportunity to talk to the doctor.
 - 23% complained of nurses and doctors saying different things.