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Asymptotic Medicine

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Medicine and "Big Pharma" (1), as its strongest ally, are rapidly reorienting toward treating the healthy people, which is well reflected in the Ray Moynihan's term of disease mongering (2) and Richard Smith's list of non-diseases (3). The most obvious and commonest reasons for this trend are profit (healthy people are more numerous and wealthier than ill people), defensive medicine (fear from lawsuits for malpractice) (4), greater personal satisfaction, and better health outcomes (generally, healthy people have better outcomes than the sick ones). However, there are some other, less obvious, reasons why physicians choose to treat healthy people.

Let us take a look at the list of the most prevalent medical procedures (Box 1) and the most common pharmaceutical interventions (Box 2) aimed at healthy people (lifestyle pharmacology), which pervade almost all medical specialties (5-9).

FEEL-GOOD DRUGS AND COERCIVE NORMALITY

The above-listed medical procedures and pharmaceuticals make the patient feel better without curative properties. Furthermore, most of these treatments and medications are basically targeted less to help the patient, or "patient," and more to "help" the society by "normalizing" the patients and, subsequently, by homogenizing the population.

Virtually, any unpleasant or socially unwanted human condition can become the object of medical-pharmaceutical treatment, and justification is almost universal: in today's globalized culture, physical and mental well-being (euphemism for "normality" or coercive normality) are highly appreciated and of a great social value and any aberration from this socially demanded "normality" has a great impact on patient's quality of life (12).

In other words, physicians are dealing with social injustices by prescribing drugs to render their patients more similar to the norm, and thus concealing the fact that it is up to society to eliminate injustice while retaining the population's heterogeneity.

It is not so annoying when a physician deals with patient's prominent ears or snub nose, but let us take an illustrative, although extreme, example: suppose there was a medication that could make everybody's skin color exactly the same. If everyone took the medication, discrimination based on skin color would certainly be eliminated. However, having the "wrong" skin color is not a "lifestyle problem," nor are aging, menopause, or shyness (13). Obviously, medicine plays a role of strong social regulator, concealing some aspects of social injustice and inequality.

TECHNOLOGY OF USELESSNESS

Besides physician-healthy patient relation, there is also a second important element of modern medicine – medical technology.

There are two scenarios about the future of technology – one is that totally useful technology would finally bring us to the Utopia and the other that technology would overpower us and create the Dystopia. Today, a third scenario is emerging: the rise of useless technology or the technology of uselessness. We still remember the technology of Star Wars, but we are also aware of the huge amounts of nuclear weapons that could destroy the planet not only once, but many times: all of these extremely elaborate and extremely expensive items are genuinely and undeniably useless. Moreover, their real value is mainly in their uselessness – their creation and production was from the beginning driven by the idea that these weapons will never be activated (14).

LOW-HANGING FRUIT

Similar technology of uselessness can be detected in health care systems, especially in many transitional countries, ie, diagnostic image devices that cannot be used because no staff was trained to use them (I cannot corroborate my observation by any reference because this problem is not the one that local physicians or journalists are allowed to research or write about).

Many expensive medications can be described as a high-hanging fruit, ie, they are extremely complicated to develop, extremely expensive, and of very little benefit. When we compare the cost-benefit ratio of low-hanging medical fruits like soap and running water used in the prevention of infectious diseases (15) with that

of modern high-hanging fruits (like extremely expensive cytostatics that extend the life for only a few weeks or extremely expensive medical apparatuses, like 25-gauge vitrectomy, that provide relatively small benefit compared with smaller gauge vitrectomies) (16,17), we see that the latter asymptotically approaches the infinity – to the point of medical ***l'art pour l'art,*** pure medical technology emancipated and liberated of usefulness.

SHRINKING AREAS OF PEAK-SHAPED KNOWLEDGE

There is also a third important element of modern medicine, ie, medical education. We can see that it has been taken over by a trend of fragmentation into narrowly confined specializations and sub-specializations, and that physicians are forced to develop a peak-shaped knowledge by learning more and more on progressively shrinking areas

Box 1..

List of the most prevalent medical procedures aimed for healthy people

Pediatrics

Routine circumcision of neonates

Umbilical cord blood banking

Dermatology

Skin lightening (with kojic acid, polyphenol extract from acerola, arbutine; laser treatments)

Cosmetic tattooing

Hair transplantation

Permanent hair removal (laser epilation)

Injection of botulinum toxin

Injectable facial implants (collagen, hyaluronic acid, autologous fat tissue)

Laser skin resurfacing

Chemical peeling

Mesotherapy

Microdermabrasion

Aesthetic treatment of leg veins (sclerotherapy, laser therapy)

General surgery: procedures of body contouring

Abdominoplasty ("tummy tuck")

Mammoplasty (breast reshaping): breast augmentation (fat grafting, saline or silicone gel prosthetics); breast reduction; breast lift

Male pectoral implant

Buttock augmentation (silicone implants or fat grafting)

Liposuction

"Abdominal etching" liposuction technique (creates definition of "six-pack abs")

Brachioplasty (surgical treatment for upper arm soft tissue excess and laxity)

"Thighplasty"

Scar revision

Radical surgical makeover (4-5 surgical procedures at a time)

Maxillofacial surgery

Rhytidectomy ("face lift")

Chin augmentation (with an implant or by sliding genioplasty of the jawbone)

Cheek augmentation

Collagen, fat, and other tissue filler injections (eg, hyaluronic acid)

Scalp advancement

Facial implants

Ophthalmology

Subconjunctival decorative implants

Eyelash transplantation

Laser pupilloplasty (permanent dilation of pupils)

Blepharoplasty, including Asian blepharoplasty in order to look more Caucasian

Eyelash-lengthening drug tradename Latisse, bimatoprost solution 0.03%, produced by Allergan, was developed from drug used for the treatment of glaucoma)

Andrology/male urology

Scrotal implants

Penis enlargement (with a filler injections or fat grafting)

Gynecology and obstetrics (5)

Labiaplasty

Cosmetic genitoplasty

Vaginal rejuvenation

Designer vaginoplasty

Hymenorrhaphy (revirgination)

G-spot amplification

Elective Cesarean section on term

Digestive surgery (different procedures of bariatric surgery or weight loss surgery) (6)

Biliopancreatic diversion

Jejuno-ileal bypass

Vertical banded gastroplasty

Adjustable gastric band

Sleeve gastrectomy

Gastric bypass surgery

Sleeve gastrectomy with duodenal switch

Implantable gastric stimulation

Esthetic dentistry (7)

Tooth whitening

Tooth contouring

Enamel-shaping (or tooth bonding; an enamel-like dental composite material is applied to a tooth's surface)

Dental bridges

Cosmetic porcelain veneers

Gingivoplasty (gum lift)

Gingivectomy

Dental implants

Microabrasion

Crowns

Orthodontic treatments

Jaw wiring (orthodontic brackets preventing the eating of solid foods)

Orthopedics

Rib removal (the lowest ribs surgically removed to make the waist thinner)

Leg lengthening surgery (Ilizarov technique of surgical lengthening of leg bones)

Cosmetic surgery of the feet (eg, shortening of the secnd toe)

Otorhinolaringology

Rhinoplasty

Otoplasty

Non-surgical therapy of non-apnoic snoring

Mandibular advancement splints

Continuous positive airway pressure devices

Surgical therapy of non- apnoic snoring

Uvulopalatopharyngoplasty

Laser-assisted uvulopalatoplasty

Palatal stiffening techniques

Pillar implants

Injection snoreplasty

Radiofrequency ablation of the soft palate or tongue base

Box 2.

List of lifestyle pharmaceuticals (8)

Drug therapy for obesity: sibutramine, orlistat, phentermine, diethylpropion, fluoxetine, bupropion, amphetamine, methamphetamine; sertraline, topiramate, zonisamide, rimonabant

Use of human growth hormone for normal, healthy, aging adults (9)

Norethisterone for postponing the menstruation

Pharmaceuticals targeted to alleviate the menopausal "symptoms" (hormone replacement therapy, local therapy for vaginal dryness, nutritional supplements, black cohosh extract...)

Pharmaceuticals targeted to alleviate the "symptoms" of normal aging or "somatopause" (nootropics; psychopharmaca; hormones; ecodrugs ie, plants and herbs with known hallucinogenic, sedative or stimulating effects) (10)

Pharmaceuticals for erectile dysfunction (sildenafil, vardenafil, tadalafil, phentolamine, apomorphine)

Dapoxetine against premature ejaculation

Pharmaceuticals for androgenetic baldness (finasteride, dutasteride, minoxidil, topical caffeine)

Testosterone therapy for andropause

Pharmaceuticals for smoking cessation (bupropion; GW468816, glycine receptor; lazabemide; nicotine replacement therapies)

Paroxetine for the treatment of social phobia (ie, shyness)

Pharmaceuticals that improve cognitive functions in mentally and neurologically healthy people (11): modafinil, adrafinil, methylphenidate, inderal, piracetam, aniracetam, amphetamines

of medical art and science (18). This trend is similar to the one in medical technology: knowledge/area ratio asymptotically approaches the infinity.

When we take into consideration all 3 above-mentioned elements of medicine: physician-patient relationship, medical technology, and medical education, we can imagine 3 possible scenarios of the development of medicine in the future.

One is the Cuban model (19): extremely cost-effective and efficient medicine able to strongly influence the politics in order to improve the general health in a population (but not recommendable for those who do not prefer hospital rooms with 50 beds and plaster from the ceiling dripping on the bed-ridden patients).

The other is the American model: extremely expensive, cost-ineffective, and excellent for those belonging to 60% of wealthy and well-insured patients (20).

The third model, envisioned in this text, is a medicine where physicians who have total knowledge about infinitely small area will use totally useless and infinitely expensive medical technology to treat totally healthy and infinitely wealthy patients.

Can we imagine a fourth model?

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