

Chapter 09

Pigeon Keeping and its Effect on Health and Family Life

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Pigeon keeping/breeding, an exciting and satisfying hobby, is prevalent worldwide and a lot has been written about this hobby/profession and pigeon fanciers in the popular media, websites and books. It is well known that pigeons transmit diseases especially pulmonary disorders in pigeon keepers/breeders, but, not much is available in the scientific/medical literature regarding the impact of this ‘addiction’ on the psychological and mental health of the individuals and family life/relations. The following narrative is based mainly on personal experience (NJI), observations (ZHI), various websites and common sense.

Pigeon (*Columba livia domestica* - domesticated from wild rock dove) keeping/breeding, practiced for thousands of years in almost every part of the world, has evolved into a hobby or a commercial enterprise for the purpose of aesthetic satisfaction, recreation, entertainment and food [1]. The hobby of breeding or keeping pigeons by pigeon fanciers, for racing (sport), flying, homing, and show, is a popular occupation throughout the world. Worldwide, it is estimated that there are more than a million pigeon fanciers. Belgium claims to be the capital of pigeon fanciers. The world’s most valuable racing pigeon, named Bolt (named after Usain Bolt, world’s fastest runner) (Figure 1) was sold in 2013 for \$410,000 by a Belgian pigeon fancier, Leo Heremans, to a Chinese businessman [2], and in 2017 it was Belgian’s ‘Golden Prince’ (Figure 2) sold for \$465,000 [3,4] at an auction conducted by PIPA, which organizes the largest meeting event for pigeon fanciers. Nicolaas Gijsselsbrecht, a Belgian national, runs the world’s biggest pigeon website, “Pigeon Paradise@PIPA_be”, which has more than a million followers worldwide. The business of breeding pigeons for food [exotic meat (squab) and eggs] has also flourished.

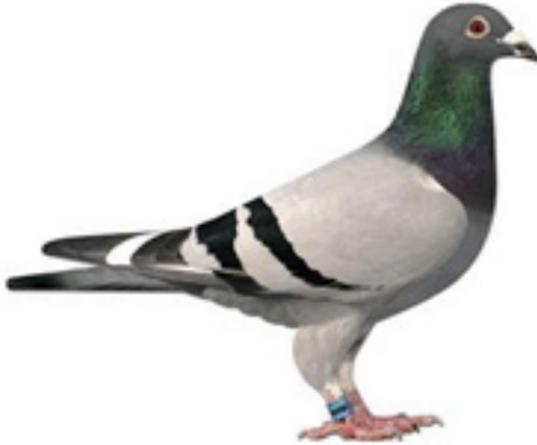


Figure 1: Bolt.



Figure 2: Golden Prince.

Pigeon fanciers have distinguished company [5-7], including the royalty, Mamluk Sultan of Egypt, King Leopold II, British Kings (Edward VII, George V and George VI), and Queens Victoria and Elizabeth II, King of Belgium, Sultan of Johore, Prince Bernard, German Chancellor Willi Brandt, French President Mitterrand, fashion designer Maurizio Gucci, entrepreneur Walt Disney, inventor Nikola Tesla, artists Pablo Picasso and Claude Monet, scientist/naturalist Charles Darwin and Gerald Durrell, French revolutionary Maximilian Robespierre, boxing champions George Foreman and Mike Tyson, The Rothschild family, actors Yul Brynner, Roy Rogers, Marlon Brando, Tony Curtis, Michael Landon, Lee Marvin and Clint Eastwood, Paul Newman, Joanne Woodward, Rock and Roll singer Elvis Presley, jazz musician Johnny Otis, American football quarterback Terry Bradshaw and baseball player Willie Mays, Irish International footballer Paddy Ambrose, Panamanian dictator Manuel Noriega, etc.

There are at least 800 breeds of domesticated pigeons categorized as (historical) messenger pigeons, homing pigeons, tumbler pigeons, flying/sporting pigeons, racing pigeons, fancy pigeons, and utility pigeons [8]. The pigeons mate for life and both males and females collect straw and make a small nest. The female lays eggs starting at an age of 5-6 months and breed up to 8 times a year (two young ones at a time) for up to 5 years. The incubation period is 18/19 days and both parents feed the young until the age of 2 months. It may be difficult to determine the gender of a pigeon; males have rounded head while females have flattened area on the skull. Domesticated pigeons live for about 13 years (some as long as 30 years) [9]. It has been reported that pigeons are one of the most intelligent birds having intelligence higher than an average three-year-old child, and are able to recognize all 26 letters of the English language [9-11]. Pigeons have good memory, since when released 400-600 miles away they return home [11]. There are many theories [such as use of the earth's magnetic field, visual clues such as landmarks, roads, the sun and even infrasounds (low frequency seismic waves)] about how pigeons manage to return 'home' after being released hundreds of miles away [11]. Racing pigeons regularly fly at speeds of 50-60 mph [9].

Pigeon keepers (fanciers) keep the pigeons in well-designed lofts (size depending on the number of pigeons) with enough floor space (for exercise and socializing), with good ventilation system and providing protection from the elements and predators. The lofts have nest boxes/aviary space, exterior landing board and trap, feeding areas and a clean water supply. Some lofts may have separate interior aviary space for young birds, breeding birds and older birds. There is also storage space for feed [mostly whole grains or pellets, supplemented with vitamins and trace minerals, some grit and gravel (given for food digestion)] and equipment. The aviaries are cleaned regularly and the water supply is changed every day. Pigeons are (de-wormed) and banded according to the type of pigeon.

Homing pigeons have been used for centuries as messengers [11] and more recently during World War I and II, where pigeons such as Cher Ami (Figure 3) and G.I. Joe (Figure 4) may have saved 'thousands' of lives by carrying messages across enemy lines [9,11]. In the mid 1800's, the Reuters News Agency operated a live telex service using Homing Pigeons [11]. Pigeons are still used to carry messages by the French, Swiss, Israeli and Chinese armies.



Figure 3: Cher Ami.

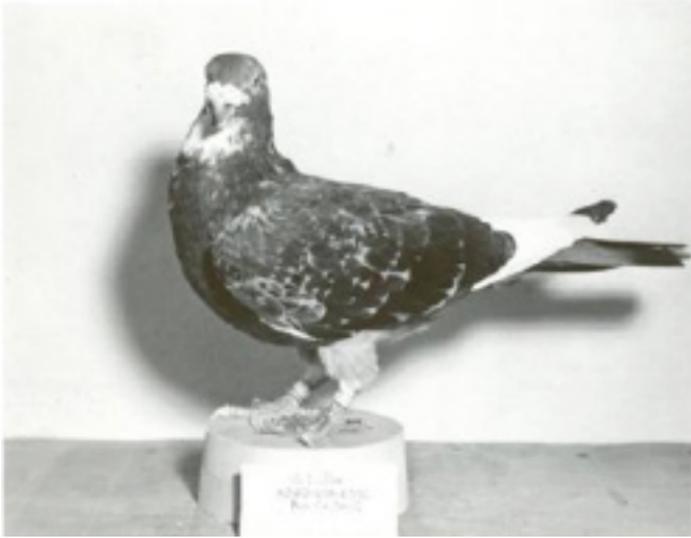


Figure 4: GI Joe.

Most countries in the world have pigeon associations, for example, the International Federation of Pigeon Fanciers, International Homing Pigeons Federation, American Racing Pigeon Union, National Pigeon Association (USA), The Royal Pigeon Racing Association (UK), Canadian Pigeon Fanciers Association, Australian National Pigeon Association, Chinese Pigeon Association, The National Association for Pigeon Fanciers in Belgium, etc. Pigeon fanciers organize exhibitions and bird shows exhibiting thousands of pigeons worldwide (for example in England, Australia, United States, Germany, Belgium, etc.), which are sponsored by hundreds of local, state and national pigeon clubs and attended by thousands of people. As an example, a 2-day British Homing World Show of the year was held on January 2-3, 2018 in the Winter Garden, Blackpool, England (sponsored by The Royal Pigeon Racing Association, UK), considered as one of the largest in the world attracting more than 25,000 visitors. More than 2000 pigeons were on display (some offered for sale). There

are events for pigeons who participate in racing (pigeons returning home the fastest from a race) such as Sun City Million Dollar Pigeon race, World Trade Center Memorial Race (sponsored by Bronx Homing Pigeon Club), Tarbe national (UK); the races are sponsored by American Racing Pigeon Union, National Flying Club (UK), Hongjin Pigeon Club, etc. China hosts more than 100,000 pigeon races annually (some organized by large corporations) [12].

Pigeon fanciers love their pigeons with passion. They appreciate their beauty, grace and soothing sounds. They get euphoria, intense pleasure and pleasant excitement from seeing their pigeons perform (racing, homing, beauty, etc.). They are so passionate about pigeons that they are sometimes called 'pigeon junkies,' and spend an enormous amount of time and money on their hobby. Many avid pigeon fanciers usually have a large number of pigeons and they often keep adding more and more to their flock. A Russian millionaire, Viktor Kharlashin, has built a fancy mansion (palace) for his 5000 pigeons and plans to leave a portion of the inheritance for the care of his pigeons [13].

However, there is a down side to pigeon keeping/breeding in that pigeon fanciers get so involved that their first priority becomes the care and handling of the birds and see them perform, while other aspects of their life, such as their own health, health of family members, as well the emotional, psychological and financial needs of family (spouses, children and others) are neglected or diminished (NJI - personal experience); even friendships (except with fellow- fanciers) are curtailed. The children and spouses may not get the necessary emotional support and quality time, necessary for a healthy family life. There may be domestic disputes and arguments resulting in strained relations. Since most of the pigeon fanciers/keepers are middle income earning males, maintaining a large flock of birds (some-time numbering in hundreds, it could also have significant impact on family finances, because a significant portion of the income may go to the birds – acquisition, feeding, housing, healthcare, etc. Even cases

of divorce have been described where women have filed for divorce “for economic reasons as well as not having any time for the families, because the husbands were too involved in pigeon racing” [14,15].

The addiction of pigeon fanciers/keepers appears to be behavioral in nature, such as in the case [16] of gambling disorder (pathological gambling), problematic Internet use and gaming, computer dependence, binge eating, compulsive buying, compulsive sexual activities, and excessive physical activity (exercise, jogging and running), etc. Behavioral addictions may lead to psychiatric disorders [17]. In the case of pathological gambling, there is a negative impact on the quality of life and financial loss of the gambler [16], impairment of family life (emotional and psychiatric disorders), depression and disruption of social relations [19,20]. Multiple neurotransmitter systems, including dopaminergic, serotonergic, noradrenergic, glutamatergic, and opioidergic, have been implicated in some behavioral addictions [21], and, in some, there is an increase in serum levels of endorphins [22] and brain-derived neurotropic factor [23,24].

There is not much in the literature (Embase, Ovid, PubMed, Scopus, Web of Science), but, from direct observations and personal experience with the pigeon fanciers/keepers indicate that not only the health of the individual but also of the family members is adversely affected, family relations are disrupted, spouses and children are neglected and there is financial strain on the family. It may be difficult to convince pigeon fanciers/keepers (using psychiatric or psychological intervention) to alter their behavior (personal experience). Pigeon fanciers may also get depressed if their prized pigeon(s) do not win in competitions or do not return home. However, they may find comfort by talking to fellow fanciers.

Pigeons are the source of several diseases that are transmissible to humans (zoonosis), mainly from exposure to bird droppings, feather dust, fungal spores and ectoparasites [bed bugs (*Cimex lectularius*), chicken mites (*Dermanyssus gallinae*), and mealworms (*Ten-*

ebrio molitor)] [25-28]. The frequency of disease transmission from birds to humans is low, but the very young, the elderly, and those with compromised immune system are at higher risk.

The main pathology that affects pigeon fanciers/breeders/keepers (and other people who clean the lofts) is the pulmonary disease caused by inhalation of fecal/feather dust (allergic alveolitis/bronchiolitis/ hypersensitivity pneumonitis/pneumothorax/ pigeon fanciers' lung/bird breeders' lung [29-32]. Patients may develop pulmonary cysts [31-33], hypersensitivity pneumonitis [34-36], peribronchial fibrosis [37], infiltration of lymphocytes and plasma cells into the walls of the bronchioles and the surrounding alveolar walls [31], bronchiectasis [37], alveolitis [32,37], dyspnea and hypoxia [31], pneumothorax [31], and fungal diseases (see later). Diagnosis of pulmonary diseases is made by chest X-ray, high-resolution chest computed tomography, pulmonary function tests, natural provocation, bronchoalveolar lavage, transbronchial lung biopsy [38], fluoroenzyme immunoassay [39], as well as presence of IgA and IgG antibodies [37,40] and other immune biomarkers [41], in the extracts of pigeon droppings and in the serum and bronchoalveolar lavage fluid of patients.

Other illnesses which have been found to be transmitted from pigeons to humans (mostly by inhalation of contaminated fecal dust) include: a) fungal diseases (by inhalation of spores of fungi growing on bird droppings) [27,28,32], aspergillosis (caused by *Aspergillus fumigatus*) [28], blastomycosis (caused by *Blastomyces dermatitidis*) [28], candidiasis (caused by *Candida* spp., mainly *C. albicans*) [28,36], cryptococcosis (caused by *Cryptococcus neoformans* [28,32,42-45], histoplasmosis (caused by *Histoplasma capsulatum* [28,32]; b) bacterial diseases [46]: campylobacteriosis (caused by *Campylobacter jejuni*/*C. coli* [46], colibacillosis (caused by *Escherichia coli*) [31,47,48]; erysipeloid (caused by *Erysipelothrus insidiosus*) [28], listeriosis (caused by *Listeria monocytogenes*) [28], parteurellosis (caused by *Pasteurella multocida*) [28], salmonellosis (caused by *Salmonella enterica*/*S. typhimurium*/*S. arizona*) [28,32,46,49], yersiniosis (caused by *Yersinia pseudotuberculosis*/*Y. enterocolitica*) [28]; c) avian tuberculosis

(caused by *Mycobacterium avium* [31,49,50]; d) protozoan diseases: cryptosporidiosis (caused by *Cryptosporidium baileyi/C.meleagridis*) [31], toxoplasmosis (caused by *Toxoplasma gondii*) [27,28], trichomoniasis (caused by *Trichomonas gallinae*) [27,28]; tripanosomiasis (caused by *Trypanosoma cruzi*) [28]; e) chlamydiosis (caused by *Chlamydia psittaci*, [32,51,52]; f) Q fever (caused by *Coxiella burnetti*) [28]; and g) viral diseases (encephalitis, meningitis, Avian flu, West Nile viremia, Newcastle disease), which are transmitted by mosquitoes feeding on infected birds [27,28,53,54]. Although, less likely, some diseases may be transmitted by parasites [42] (mites, ticks, etc.), which may be present in birds, for example, cases of dermatosis (acarriasis caused by mites) have been reported [28].

Not only are the pigeon keepers/breeders/fanciers at risk to develop the above diseases, but also members of their families (and even pets) who reside with them [24], and are exposed to bird droppings or feather dust.

Bird keepers/fanciers can decrease the risk of developing diseases associated with the birds by using gloves, aprons/coveralls, masks, goggles, boots and respirators (if needed) while inside the lofts (birds' housing), and by increasing loft ventilation and more often cleaning of the loft.

Avid pigeon fanciers who take part in pigeon racing and flying can damage their eyes from watching their birds in flight for a long time in the bright sun. According to the American Academy of Ophthalmology [55], and American Optometric Association [56], too much exposure to UV light from the sun raises the risks of eye diseases, such as cataract, corneal sunburn, and benign growth (pterygium) [57-59]. Furthermore, staying for a long time in the sun, especially in the summer, can result in dehydration, heat-stroke, photo-allergic dermatosis [60], sunburn and solar urticaria [61], facial wrinkling [62], actinic keratosis [63], allergic hypersensitivity skin reactions [63], and cancer of the skin (cutaneous malignant melanoma [64-66], squamous cell carcinoma [63], and basal cell carcinoma [67]), more likely in fair-skinned individuals.

To protect from the damaging effect of long-term exposure to sun, one could use, appropriate sunglasses, ultraviolet radiation-blocking contact lenses (if needed), sunscreen (sunblock), wearing light colored long-sleeved shirts, and avoiding exposure to sun at the most damaging hours (10.00 am - 04.00 pm). A wide-brimmed hat may be useful, but pigeon fanciers may not like to wear one, because it may scare the birds. Dehydration and heat-stroke may be prevented by ample hydration and taking breaks from staying too long in the sun.

Pigeon fanciers/keepers, who devote a lot of time in taking care of their birds, can develop back and muscle problems from sitting or standing too long, especially in the hot sun or in the cold weather. The risk of back and muscle problems may be decreased by taking short breaks and exercise.

Worldwide, pigeon racing has gained popularity and with it the associated betting (even online betting [68-69]) and gambling [70,71], increased cruelty to [72] and mortality of racing birds. It has been claimed that the birds are raised in captivity (often in cramped filthy cages) and when let loose to fly home in the long-distance races, many fall prey to predators, starve or die due to exhaustion, disorientation, or poor weather conditions [72-74]. It is estimated that 60% to 90% of birds fail to return after racing [73,75]. In some cases, underperforming pigeons are culled [74-77]. Pigeon racing in Taiwan has become an industry, with 2 million birds racing and an annual value at around US \$2.3billion [75]. Although, pigeon racing and betting has been banned in many cities of the United States, and other countries, these practices continue [78]. Another crime associated with highly prized competition pigeons is bird-napping (for ransom) and smuggling [75,79].

It is hoped that this article will result in the realization of potential for adverse effects of pigeon keeping/breeding on health and family life, adoption of preventive measures, and stimulating a dialog.

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(Israili ZH (2017) Effect of Pigeon Keeping on Health and Family Life. J Comm Pub Health Nurs 3:190. doi:10.4172/2471-9846.1000190). Copyright: © 2018 Zafar H Israili and Nazia J Iqbal. It is hoped that this article will result in the realization of potential for adverse effects of pigeon keeping/breeding on health and family life, adoption of preventive measures, and stimulating a dialog. 12. www.avidscience.com. The only other health risks associated with long-distance running are due to over training. Young women who train so hard that their periods stop have a high risk of developing osteoporosis long before they reach the age of the menopause. Sometimes it's so severe that they can't even walk, let alone run in a race. But this weakening effect on the immune system is short-lived and there is no evidence of lasting disease or an increased risk of illness. So running marathons every year, or even every month, won't send you to an early grave or leave you in a wheelchair by the time you're 70, but equally, you don't have to run 26 miles to reap the health benefits. 'Marathon running is not about health,' concludes Tunstall Pedo. 'It's about competition and endurance.'