

From the explanation given by the Cambridge Dictionary, robustness is the quality of being strong, healthy or unlikely to break or fail. And also, fragility means the quality of being easily damaged or broken. Biological robustness and fragility are more likely to be a property of the biological system. When we apply a change to a system, the properties of that system may or may not change in some way. Suppose the system has insufficient resistance to the applied change. In that case, i.e., it is not easy to restore its homeostasis. The system is considered weak in robustness, i.e., very fragile. As Alderson and Doyle (2010) stated, "a property of a system is robust if it is invariant concerning a set of perturbations." As opposed to that, biological fragility presents the variant property for a system under a disturbed environment.

Healthcare Delivery Models

The total patient-care model (case nursing) implies that RNs provide care for one patient or more during a shift. The nurse works in tandem with other parties connected to healthcare services: patients, families, and team members. The continuity of care within the shift and patient-nurse interaction are the main advantages of this system. Functional nursing implies that nursing activities are assigned to functional units and that nurses perform specific tasks across a variety of patient types.

Despite the division of labor, this model does not enable autonomy or encourage professional development (Fernandez, Johnson, Tran, & Miranda, 2012). Moreover, in this case, it's only the charge nurse who bears the high responsibility of coordinating care.

Collaboration with Healthcare Provider

Team nursing implies that the RN applies leadership and supervision to coordinate a small group of ancillary personnel to care for a small group of patients. Tasks are delegated and performed by the skills and scope of practice of each team member. A patient care, in this case, is less fragmented; however, one of the main complications is communication within the team. Primary nursing is patient-centered and assumes 24-hour responsibility and accountability by the RN in terms of planning, directing, and assessing a patient's care, from admission to discharge.

The following model allows for an ongoing holistic approach to healthcare and encourages the nurse's autonomy (Fernandez et al., 2012). Still, a high level of performance and responsibility is expected from these nurses. Another model is case management, where RNs plan and supervise the processes involved in providing care to patients with complex healthcare problems.

Variables that Influenced the Healthcare Delivery System and the Practice of Nursing

Although most institutions utilize several delivery models toward higher flexibility of activities, there might be situations when nurses need to cooperate with other healthcare providers. The need for consultation and collaboration with different personnel arises when a situation goes beyond the RN's level of expertise, or if there are no available resources to perform necessary healthcare tasks (Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011).

Frequently, cooperation is needed to ensure correct diagnoses and to define a further course of action. Moreover, patients who consider a course of treatment to be inaccurate tend to request a second opinion to learn about alternative solutions for care. In any type of situation, patients and their interests remain paramount. Through consultation and collaboration, nurses can decrease medical mistakes and emphasize proper healthcare delivery.

On-Tim

Downhill from conception to birth

At conception there are more male than female embryos. This may be because the spermatozoa carrying the Y chromosome swim faster than those carrying X. The male's pole position is, however, immediately challenged. External maternal stress around the time of conception is associated with a reduction in the male to female sex ratio, suggesting that the male embryo is more vulnerable than the female.¹ From this point on it is downhill all the way. The male fetus is at greater risk of death or damage from almost all the obstetric catastrophes that can happen before birth.² Perinatal brain damage,³ cerebral palsy,⁴ congenital deformities of the genitalia and limbs, premature birth, and stillbirth are commoner in boys,⁵ and by the time a boy is born he is on average developmentally some weeks behind his sister: "A newborn girl is the physiological equivalent of a 4 to 6 week old boy."⁶ The male brain is heavier, with a larger hypothalamus, probably from the influence of a surge of testosterone in the third trimester of pregnancy, which also promotes greater muscle bulk.⁷ Similar differences have been observed in chimpanzees.⁸ At term the excess has fallen from around 120 male conceptions to 105 boys per 100 girls.⁹

Male excess of developmental and behavioural disorders

By the time a boy is born the pattern seems set. Developmental disorders such as specific reading delay,¹⁰ hyperactivity,¹¹ autism and related disorders, clumsiness, stammering, and Tourette's syndrome¹² occur three to four times more often in boys than in girls, although girls, when they have such a disorder, may be more severely affected.¹³ Conduct and oppositional disorders are at least twice as common in boys.¹⁴ Genetic factors are known to play a part, varying from low heritability in conduct disorder to high in autism,¹⁵ but why are they all commoner in boys? None of these conditions is sex linked in the classical sense. But Skuse et al propose that the X chromosome does carry some of the burden of the social and cognitive deficits that are common to many (but not all) of these disorders.¹⁶ They found that,

of people with Turner's syndrome (XO), those with an X chromosome from their mothers (who would be boys if they also had a Y chromosome) had significantly more hyperactivity, attention deficits, and poorer social and emotional expressivity than those with X chromosomes from their fathers. These results are supported by the twin study of Scourfield et al, which shows a significant genetic influence on social cognition to the disadvantage of males.¹⁷ "Males are attempting something extra all through life."¹⁸