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Children's Physic: Medical Perceptions and Treatment of Sick Children in Early Modern England, *c.* 1580–1720

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Summary

Historians of medicine, childhood and paediatrics have often assumed that early modern doctors neither treated children, nor adapted their medicines to suit the peculiar temperaments of the young. Through an examination of medical textbooks and doctors' casebooks, this article refutes these assumptions. It argues that medical authors and practising doctors regularly treated children, and were careful to tailor their remedies to complement the distinctive constitutions of children. Thus, this article proposes that a concept of 'children's physic' existed in early modern England. This term refers to the notion that children were physiologically distinct, requiring special medical care. Children's physic was rooted in the ancient traditions of Hippocratic and Galenic medicine: it was the child's humoral make-up that underpinned all medical ideas about children's bodies, minds, diseases and treatments. Children abounded in the humour blood, which made them humid and weak, and in need of medicines of a particularly gentle nature.

Keywords

child; childhood; paediatrics; patient; age

Today, the general consensus amongst historians of childhood is that 'all societies at all times have had a concept of childhood'.[1] The thesis of Philippe Ariès—that the idea of childhood did not exist until the seventeenth century—has thus been firmly rebutted.[2] In the context of medical history, however, Ariès's legacy lives on: scholars continue to assume that until as late as the nineteenth century, doctors neither recognised 'the physiological differences in infants, young children, adolescents, and adults', nor 'acknowledged the need for … treatment designed specifically for children's unique physiology'.[3] I wish to refute these assumptions, demonstrating that early modern medical authors and doctors did distinguish between child and adult patients, and that they did adapt children's medicines to suit their peculiar temperaments.[4] Children's minds, bodies, diseases and treatments were all in some way unique. This article thus brings the historiography of medicine in line with the current status of childhood historiography, and proposes that a concept of 'children's physic' existed in early modern England. The term 'children's physic' has been coined to refer

[1]Heywood 2001, p. 10.
[2]Aries 1962. Those challenging him include Houlbrooke 1984; Pollock 1987; Orme 2001; Shahar 1990; Hanawalt 1993.
[3]Colon 1999, p. xiv; Fletcher 2008, p. 59; Rieder 2003, p. 234.
[4]For laypeople's perceptions and treatments of sick children, see Newton 2009.

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explicitly to the medical notion that children differed from adults, requiring special medical treatment. It would have been tempting to use the word ‘paediatrics’ instead, but since this term was not widely adopted until the nineteenth century, its use here would be anachronistic.

Recently, Colin Heywood criticised historians for writing ‘unduly simplistic’ histories of childhood which ‘polarize civilizations in terms of the absence or presence of an awareness of childhood’, and implored scholars instead to explore the ‘different conceptions of childhood’.[5] I endeavour to heed this advice by uncovering the nature of early modern medical perceptions of children, rather than simply by arguing that children were thought to be physiologically different from adults. It will be shown that children’s physic was rooted in the ancient traditions of Hippocratic and Galenic medicine: it was the child’s humoral constitution that underpinned medical ideas about children’s uniqueness in this period. Children’s physic was therefore not new in the seventeenth century, but could probably be traced from ancient times through to the early modern period.[6]

The period from the 1580s onwards witnessed an explosion in the publication of printed vernacular medical literature. The types of medical text used in this article include treatises about children’s diseases, midwifery handbooks and medical texts of a more general nature. The authors were usually learned physicians and surgeons from England and Europe. The texts probably functioned as practical medical guides for literate laypeople and practising doctors. This can be inferred from their accessible writing styles and direct statements of purpose. Felix Wurtz, for instance, dedicated his surgical treatise, *Childrens Book* (1656) to ‘young Surgeons, wet and dry Nurses, Maid Servants, and other parties, to whose trust and overlooking little Children are comitted’.[7] Other texts, however, were written in a more scholastic manner, which indicates that they may have been intended for elite physicians rather than the general population.

It is difficult to estimate to what extent the medical texts are representative of the opinion of most medical practitioners in early modern England. The majority of practising doctors did not publish medical texts, and even fewer wrote treatises specifically on the subject of children. It is possible, therefore, that the physiological uniqueness of children conveyed in the midwifery texts and treatises on children’s diseases may be misleading, since by definition the authors believed that children were worthy of special attention. Nevertheless, the fact that many of these treatises went through multiple editions suggests that there was a large demand for medical information about children, and that the texts held some resonance with their buyers. The first English book on children’s diseases, Thomas Phaer’s *The Booke of Children* (1544), was one of the most frequently reprinted medical texts of the Tudor era, whilst *Acute Diseases of Infants*, by the Gloucestershire physician Walter Harris, went through six editions between the 1690s and 1740s. Furthermore, it is possible to ascertain whether the authors of these treatises were unusual in their views, by making comparisons

[5]Heywood 2001, p. 15.
[6]MacLehose 2006, ch. 1, and Benzaquen in Muller (ed.) 2006, p. 13, state that ancient writers discussed children’s diseases. Some of the medical texts used in this article were first published before 1580; this indicates that the concept of children’s physic pre-dates the timeframe of the article.
[7]Wurtz in Ruhrah (ed.) 1925, p. 199.

with general medical texts that deal with all ages, since these were written from a less explicitly child-focused perspective.

Another problem with medical texts is that they may not reflect what was actually happening in clinical practice. Paul Slack has suggested that on a daily basis, doctors and laypeople may not have followed the precise instructions for making medicines; they may have left out ingredients, or skipped over certain procedures.[8] Nevertheless, the possible gap between theory and practice can be tested by the use of other primary sources, such as doctors' casebooks and observations, which are more likely to reveal what was actually happening in the sick-chamber.

The first part of this article examines medical perceptions of children's constitutions, bodies and minds; the second part turns to their diseases; and the final part examines children's treatments. Medical authors usually defined childhood as beginning at birth, and ending with the onset of puberty at the age of about fourteen.[9] The term 'infant' was also used, but this tended to refer to babies and young children. The terms were used flexibly.

Children's Constitutions

Children's constitutions and bodies were characterised, above all, in terms of their distinctive humoral make-up. Hippocratic and Galenic medical traditions taught that all living beings were ultimately reducible to four qualities: heat, coldness, moisture and dryness. Four corresponding liquids ('humours') embodied these qualities in varying proportions: blood (warm and moist), choler (warm and dry), phlegm (moist and cold), and melancholy (dry and cold). The precise balance of the humours in each human, and the resulting strength and texture of the body, was determined largely by age, for it was understood that as people grew older, their humoral constitutions gradually altered. As J.S., the author of *Paidon nosemata*, declared, 'The Life of Man consists in Heat and Moisture, the Heat consumes by degrees the Moisture, whereby necessarily follow several Changes of the Temperament, which are called Ages.'[10] This was echoed by the Oxford scholar Henry Cuffe in 1607, who stated that life was a 'continuall combat' between the 'ever-jarring elements' of heat and moisture, wherein 'heate without any the least intermission or pause, worketh upon our moisture'.[11] The ages through which humans passed included 'infancy' or 'childhood' (0–14), 'youth' (14 or 15 to about 25), 'adulthood' (25 or 30 to 50 or 55), and finally old or 'decrepit age' (55 or 60 until death).[12] At birth, the temperature was warm; it then rose until the end of youth, but after this age it steadily declined. By contrast, moisture was greatest at birth, and then fell progressively until death.

Thus, for each age, the humoral balance was distinct: 'our infancy [is] ful of moisture, as the fluid substance of our flesh manifestly declareth: our youth bringeth a farther degree of solidity: our riper age ever temperate: thence still inclineth our body unto cold and drinesse, till at length death ceaseth upon our bodies, being the last end and period of our life'.[13] In

[8]Slack in Webster (ed.) 1979, p. 257.
[9]W.S. 1704, preface.
[10]J.S. 1664, p. 2. Some scholars believe J.S. may have been John Starsmere, while others think it was Jane Sharpe.
[11]Cuffe 1607, p. 113.
[12]Cuffe 1607, pp. 114–15. See also Haworth 1683, pp. 202–3 and J.S. 1664, pp. 2–3.

childhood, bodies contained great quantities of the humour blood, and therefore tended to be warm and moist. These characteristics had an effect on the child's bodily strength and texture, making it soft and weak, or 'tender'.[14] Youths, by contrast, were warmer and drier, and therefore stronger, hence their association with choler. Adults were usually depicted as more temperate and strong, sometimes being linked with the humour phlegm. Finally, the elderly were characterised by their high levels of melancholy, and the corresponding qualities of coolness, dryness and weakness. Some of the characteristics of children were shared with other ages or groups of human beings: weakness, for example, was associated with the elderly, and to a lesser extent, women, whilst warmth was also linked to youth. However, crucially, no other age exhibited all of the characteristics, and therefore it seems that children were perceived to be humorally unique. This notion was probably widespread amongst doctors throughout the early modern period.[15]

It was not just children's general constitution that was thought to be humorally distinct. Every single body part shared these characteristics: the bones and cartilages, for example, were 'most humid … perfectly soft and flexible', whereas in the elderly, they are 'dry and wither'd'.[16] Children's minds were also characterised in this way. J.S. suggested that the rational soul was 'drowned and drunk with moisture and humours', and as a result, children had weak powers of reason.[17] Since alcohol was a standard drink in this period, it is unsurprising that moisture came to be associated with irrationality and drunkenness. Children's capacities to feel emotions were also thought to differ from adults. Helkiah Crooke noted in 1615 that children often felt anger more strongly than older people because they had 'weake mind[s] which cannot moderate it selfe'.[18] This mental characteristic stemmed from the weakness of the rational soul: it was easily overpowered by the animal soul and its passions.

Children's behaviour and regimen were also distinguished from those of adults in terms of their humours. As regards sleep, W.S. wrote, 'Children for some time after they come into the World sleep not moderately, as having had a long Repose in the Womb, and therefore is naturally in its Infancy desirous of Rest'.[19] This was 'because his body is very moist, not only by the abounding with humours, but by the solid parts being moist and soft'.[20] Another distinctive characteristic of children related to their diet. It was widely believed that 'All children are naturally very greedy, and gluttonous … they doe fill themselves with much milke or with store of divers other victuals'.[21] Doctors explained this characteristic by referring to children's growing bodies, which needed constant nourishment.

Within the age of childhood, the humoral constitutions of individual children varied. There were three main categories of variation: firstly, age. Doctors believed, 'The yonger Children are of a colder temperament than the Elder. For the heat of the temperament is augmented

[13] Cuffe 1607, p. 114.
[14] Guillemeau 1635, p. 47.
[15] J.S 1664, pp. 2–3, 26–8; Mauriceau 1710, p. 345. See Newton 2009 for further examples.
[16] Harris 1693, pp. 3–4.
[17] J.S. 1664, p. 87.
[18] Crooke 1615, p. 276.
[19] W.S. 1704, p. 50.
[20] J.S. 1664, p. 105.
[21] Guillemeau 1635, p. 68.

from the time of the birth to mans estate'.[22] Furthermore, 'The yonger Children are more moist than the elder; for to wax old, if it be taken in a sound sense, is to wax dry'.[23] It was thought that as infants grew older, their temperatures increased, and this in turn had the effect of drying up the moisture, and making their bodies stronger.

A second way in which children's humoral constitutions differed was in relation to their individual strength, temperament and weight. In 1721, the physician Charles Maitland wrote to Sir Hans Sloane on the subject of two young brothers, Joseph and William Heath: 'What a Mighty difference there is to be obser'v, Between these two boyes!' he exclaimed, for one was of a 'clean Habit', slim and strong constitution, whilst the other child was weakly, 'fat … [and] foul constitution'.[24] Although all children had a general tendency to humidity and weakness, medical authors believed that individuals could vary on this scale. Francois Mauriceau explained that these differences were natural: 'Very often', the children who contracted the disease the 'French Pox', had been 'weak at their Birth … by Nature'.[25] However, nurture was also important in fostering these characteristics. John Locke asserted that 'children's constitutions are … weakened … by [the] cockering and tenderness' of parents, but that if they were brought up in a 'plain rustick way' they would become 'strong … and hardy'.[26]

A third constitutional variable within the age of childhood was gender. Whilst historians have shown much interest in the question of how gender might have influenced children's upbringings, they have largely ignored the issue in the context of medical perceptions of children.[27] This is puzzling when one considers the vast amount of attention historians have devoted to the role of gender in physiological conceptualisations of adults.[28] J.S. highlighted one difference between girls and boys when discussing the tendency of males to contract smallpox more frequently than females: the reason was 'boys being hotter', shared the humoral cause of the disease.[29] Boys were warmer because 'Males are generated out of a hotter seede, Females of colder … Adde hereunto the nature and condition of the [womb] … , for Males for the most part are generated in the right side [whereas] Females in the left … the right side is hotter than the left'.[30] Occasionally, writers also mentioned that girls' bodies were weaker than those of boys.[31] Although it is likely that medical writers generally agreed about the gender difference, this variable does not seem to have been as significant as the other variables discussed above, since it was mentioned far less frequently. This is intriguing because in adulthood, gender differentiation was crucial in medical narratives. Wendy Churchill believes this difference sprung from the idea that children's bodies were 'unsexed' until the time of puberty.[32]

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[22]Glisson *et al*. 1651, pp. 188–9.
[23]*Ibid*.
[24]British Library, Sloane, MS 4034, fol. 20r-20v.
[25]Mauriceau 1710, p, 320.
[26]Locke 1976, vol. 2, pp. 624–9, 686–9, vol. 3, p. 56, vol. 4, pp. 719–23.
[27]Houlbrooke 1984, pp. 150–1; Mendelson and Crawford 1998, pp. 77–123; Fletcher 2002, p. 417; Fletcher 2008, pp. 12–36; Marten (ed.) 2007, p. 232.
[28]For example, Duden 1991; Mendelson and Crawford 1998, pp. 77–80; Pomata in Finucci and Brownlee (eds) 2001.
[29]J.S. 1664, p. 59.
[30]Crooke 1615, p. 308.
[31]Locke 1963, p. 130.
[32]Churchill 2005, pp. 19–20.

Children's Diseases

Many of the maladies from which children suffered differed from those contracted by adults. As J.S. explained, 'the … Diseases of Children are so called, not only such which trouble and affect only Children … but also such Diseases which most frequently happen to Children'.[33] In the treatises devoted entirely to the subject of children's medicine, authors usually listed between 30 and 45 diseases, which included conditions as diverse as smallpox, epilepsy, diarrhoea, nightmares and teething. There was not much change over time in the types of diseases appearing in the medical texts.[34]

The precise range of ailments to which children were susceptible varied once again according to their age, constitution and, to a lesser extent, their gender. The age of the child was the most important, as is indicated in the *Aphorisms* of Hippocrates:

> Diseases of this nature happen to … new born Babes, creeping Ulcers … Vomitings, Coughs, Watchings [insomnia] … Inflamations about the Navil, and moistnesse of the Ears. … When they come to breeding of Teeth … prickings of the Gums, Feavers, Convulsions. … But when they are somewhat older, Inflamations of the Tousills … beatings upon the inward part of the Vertebra … difficulty breathing, the Stone, Round-wormes … swellings about the Neck … small pustules or pimples.[35]

The child's individual strength and weight also impacted on his or her disease vulnerability. In 1693, Harris stated that, 'Corpulent and fat Infants [are] troubled with Defluxions, and having an open Mould, are most subject to the Rickets, Chin-Cough, Kings-Evil [scrofula], and almost incurable Thrushe', whereas 'Lean and Scraggy Children are, the most tender and very subject to the worst Fevers'.[36] By contrast, gender had a comparatively small impact on the range of diseases contracted by children. Jacques Guillemeau, the author of a midwifery text published in 1635, wrote that 'chiefly Male-children, are much troubled at this day with the rupture'.[37] The diseases associated with the male genitalia—the 'yard' and 'coddes'—were obviously confined to males. Even fewer diseases were associated particularly with girls.[38] This comparative lack of 'gendered' diseases in both sexes is at odds with medical understanding of the diseases of adults, which were often linked to gender.[39]

It is important to examine the causes of children's diseases in order to assess the extent to which they were considered to be specific to the age of childhood. The fundamental cause of disease, God for the punishment of sin, was applicable to all ages, since every human being, down to the smallest infant, was tarnished with original sin.[40] Likewise, the main physical

[33] J.S. 1664, p. 5.
[34] For example, compare Phaer in Ruhrah (ed.) 1925 with Pechey 1697.
[35] Hippocrates 1665, section 3, aphorisms 24–9, pp. 56–7.
[36] Harris 1693, p. 38.
[37] Guillemeau 1635, p. 71.
[38] Girls' diseases included the 'closed-up womb' and 'pissing the bed': Guillemeau 1635, pp. 91, 79.
[39] Mendelson and Crawford 1998, pp. 23–9.
[40] Houlbrooke in Fletcher and Hussey (eds) 1999, p. 50.

cause of disease, humoral imbalance or corruption, which God used to bring disease into fruition, was universal, applying to all humans and even to animals.[41]

However, while the overarching causes were not unique to children, the factors that contributed to the humoral imbalance were more so. These causes can be labelled 'subsidiary' for convenience. Physicians invoked these child-specific causes because they were trying to explain 'how it comes to pass, that they which are grown to mans estate are not infested with these evils, as wel as children'.[42] The first of these causes was the child's natural constitution, and in particular, the weakness of the body:

> Young Trees are scarce rais'd out of the Earth … but often many of them soon after die; because their Bodies, by reason of the tenderness of their Sub[s]tance, easily receive alteration, and cannot without great difficulty resist the smallest opposition, until they become a little bigger, and have taken deeper Root: So likewise we see daily above half of the you[n]g Children die … as well because of the tenderness of their Bodies, as by reason of the feebleness of their Age.[43]

Thus the high rates of morbidity and mortality in children were attributed to their bodily weakness. Children's bodies were of insufficient strength to suppress the processes of humoral alteration. One of the diseases resulting from this weakness was the cough, 'which happens unto them, because their lungs are weake and tender, which for every little thing that troubleth them, they endeavour to discharge and rid themselves of it, with some striving agitation'.[44]

Another element of children's natural constitutions that caused humoral imbalance was their humidity. J.S. asserted that 'every Age hath a peculiar temper, and so a similitude with some Diseases'.[45] Since diseases were caused by humours, the humoral make-up of the patient would predispose that patient to the diseases which shared its humoral cause. Thus, in children, their 'hot and moist temper' inclined them to diseases of this quality. One such disease was 'lice'. Nicholas Culpeper explained that 'Lice are creatures that breed … chiefly in children … that are hot and moist have many excrements that are fit to breed Lice'.[46] In clinical practice as well as prescription, doctors mentioned this cause. Ysbrand Van Diemerbroeck, a physician from Utrecht, attributed the 'Epileptic Convulsions' in his patient of seven months old to the fact that 'the Brains of Children are very moist, and thence arise many watry and flegmatic Vapors'.[47]

Another set of subsidiary causes were those that were inherited, involving the transfer of malignant matter from the parent to the child before birth.[48] The first of these was the 'infection' of the generative 'seed' from which the child was formed.[49] Doctors believed

[41]Cuffe 1607, p. 7. Hill-Curth in De Blecourt and Usborne (eds) 2004, pp. 57–66, has made this point about the shared humoral causation in animals.
[42]Glisson *et al*. 1651, p.186.
[43]Mauriceau 1710, p. 317.
[44]Guillemeau 1635, p. 47.
[45]J.S. 1664, pp. 2–3.
[46]Culpeper 1662, p. 239; Sennert 1664, p. 250.
[47]Van Diemerbroeck 1689, p. 134; J.S. 1664, pp. 87–9.
[48]Mary Fissell has discussed the inheritance of parents' appearances in her book Fissell 2004, pp. 203–11, but she has not explicitly addressed the issue of the inheritance of disease.

that the seeds of the mother and father, from which the child developed in the womb, sometimes contained malignant properties which, after birth, would manifest themselves as pernicious, disease-causing humours.[50] French Pox (syphilis) was caused in this way: James McMath stated, 'This is a dangerous and loathsome Disease generated of vicious and corrupt Humours sometimes from the Seed of the Parents'.[51]

Disease could also be inherited through the impure blood of the mother, which seeped into the foetus' body whilst it was in the womb, and predisposed it to many illnesses.[52] 'Children are disposed to very many Diseases' because of the 'Impurity of the nourishment in the Womb', asserted J.S.[53] There were two ways by which the mother's blood became corrupt: firstly, through lack of menstrual purging during pregnancy. Medical writers attributed menstruation to the inefficiency of women's bodies: they were unable to purify their own blood, and therefore had to shed the excess in the form of monthly periods.[52,54] Consequently, women's menstrual blood was viewed as a superfluous humour or even as a corrupt substance. During pregnancy 'the blood which was wont to be evacuated every month, and those vitious humours that are wont to be carried off with it, being detained nine whole months in the Womb, it may easily happen that the Child be injured there by'.[55] The second way by which the blood could become corrupt was through the poor regimen of the mother herself: if her 'six non-naturals' were immoderate, her bodily humours would become unbalanced or malignant, and these would then be transferred to the foetus.[56] Of all the non-naturals, diet was blamed most frequently. The Sussex physician John Pechey complained, 'many great errors being committed in Diet, many vitious humours are communicated to the Fetus with the nourishment; all which … disorder Children in the Womb, and sometimes after they are Born, occasion various Diseases and Symptoms'.[57]

A third group of subsidiary causes were those relating to children's natural physiological developments, such as the 'falling off' of the umbilical cord shortly after birth. J.S. explained that 'Children are disposed to … Diseases … because of the Cutting of the Navel String … whereby pains and inflamations may follow'.[58] Medical writers identified three diseases caused in this way: the swelling of the navel, which 'may happen when the Navel is not well bound';[59] the inflammation of the navel, which occurred when 'the Ligature is not rightly made';[60] and the 'gaping of the navel', which was a condition whereby the 'navel … would not come together' because of 'the unskilful cutting' of the umbilical cord.[61]

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[49]Crooke 1615, pp. 292, 285.
[50]Harris 1693, pp. 10–11; Mauriceau 1710, p. 362; McMath 1694, p. 382.
[51]McMath 1694, p. 382.
[52]Dolaus 1686, p. 314; Guillemeau 1635, p. 31; W.S. 1704, p. 34. Crawford has also pointed out that a number of children's disorders, including 'Scales, scabs, pustules in the head, itch, fevers and measles' were caused by 'the corrupt menstrual blood with which the child in the womb had been in contact'. See Crawford 2004, p. 23.
[53]J.S. 1664, pp. 2–3.
[54]Mendelson and Crawford 1998, pp. 21–3.
[55]Pechey 1697, p. 14.
[56]Laura Gowing agrees that 'healthy babies depended on the behaviour of the mother-to-be'. See Gowing 2004, p. 127.
[57]*Ibid*. This is echoed by J.S. 1664, pp. 2–3, and W.S. 1704, p. 34.
[58]J.S. 1663, p. 4.
[59]Pemell 1653, p. 47.
[60]Pechey 1697, p. 135.
[61]Symcotts 1951, p. 80.

Another natural development in children that caused disease was teething. 'Children … are exposed to many Diseases and Griefs' by reason of 'the Breeding of Teeth' at the age of about seven months.[62] This may seem contradictory, for it was suggested earlier that teething was regarded as a disease in itself. However, in this period, it was considered quite legitimate to label a particular affliction as a disease, a cause and a symptom. The diseases resulting from teething included the 'swelling of the gummes & jawes … fevers, crampes, palsies, fluxes, Reumes, and other infirmities'.[63] Teething caused these diseases by producing pain: children's gums were 'exquisitely tender', and the teeth were 'sharp' and 'hard', and therefore great pain resulted when the teeth 'bruised and crushed' the gums as they pierced the flesh.[64] In turn, this pain unsettled the humoral balance of the body by heating and augmenting the hot humours choler and blood.[65]

The final group of subsidiary causes related to children's environmental habits, the non-naturals. In terms of diet, physicians believed that a key instigator of disease in 'sucking infants' (breast-fed babies) was the 'corrupt' breast milk of the wet-nurse or mother. As W.S. explained, 'The Milk they suck from the Breast may be vitiated or bad', containing noxious humours, and the result of this was the occurrence of 'many fevourish Distempters'.[66] The origin of the milk's corruption was usually the poor diet of the nurse.[67] Another cause associated with diet was the child's 'naturally very greedy and gluttonous' instinct and 'tender belly'.[68] It was thought that the 'retentive and expulsive' faculties of children's stomachs were 'weaker, because they have tender bellies', and therefore, their 'continuall eating and greedy appetites' caused an accumulation of undigested food in the stomach, which would begin to putrefy and become 'vicious'.[69] Consequently, many diseases associated with evacuation resulted, such as vomiting, diarrhoea and epilepsy.[70] In practice as well as in theory, this cause was mentioned. Dr Van Diemerbroeck believed that the epilepsy of his eight year-old patient was caused by a 'Bad Diet' and his 'greedy devouring of bad or raw Fruit', which 'heaps up Crude and Flegmatic Humors' in the stomach, sending vapours to the brain, and initiating the disease.[71]

The perturbation of the mind was another non-natural that produced disease. Since it was believed that children's passions were especially powerful, it was thought that they were particularly likely to suffer from diseases caused by this non-natural. Pechey stated in 1697 that 'violent Passions of the mind make great impressions upon the Body' of the child 'and so occasion the falling Sickness [epilepsy] and other Diseases'.[72] Of all the passions, 'sudden Fright' and anger were mentioned most frequently in reference to children's disease causation.[73]

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[62] W.S. 1704, pp. 34–5.
[63] Phaer in Ruhrah (ed.) 1925, p. 174.
[64] J.S. 1664, pp. 132–3.
[65] Mauriceau 1710, p. 345.
[66] W.S. 1704, pp. 34–5. Other examples include Pemell 1653, p. 53; Culpeper 1662, p. 257.
[67] Harris 1693, pp. 17–19.
[68] Crooke 1615, pp. 163–4.
[69] *Ibid*.
[70] Guilleameau 1635, p. 61; Pemell 1653, p. 26; Culpeper 1662, p. 252.
[71] Van Diemerbroeck 1689, p. 191.
[72] Pechey 1697, pp. 12–13. Other examples include Sennert 1664, p. 252, and Anon. 1729, p. 55.
[73] Pechey 1697, p. 31; Sylvius 1682, p. 115.

Children's Treatments

Contrary to established opinion, early modern doctors often did believe that children should take medicine.[74] Every medical text or doctor's casebook examined in this research mentioned remedies for children.[75] Four particular kinds of remedies were identified as being especially suitable for children: environmental physic (which involved the regulation of the child's environment or regimen, including exercise, sleep, diet and so forth); external physic (substances that were applied externally to the skin, such as baths, ointments and plasters); non-evacuating internal medicines (medicines taken orally which had no purgative effect, such as drinks, juleps, decoctions and cordials); and finally, clysters (medicines injected anally). All of the above 'worked' by correcting the corrupt or imbalanced humours that had caused the disease, or alternatively by refreshing and strengthening the body. They did not usually cause any evacuation.[76]

By contrast, the medicines that were probably used less frequently, and with greater reluctance, were surgical and evacuative remedies. These comprised vomits and purges (medicines taken orally which had either a vomiting or laxative effect), issues (incisions in the skin which were kept artificially from healing to allow noxious bodily humours to escape), blisters (sharp or corrosive substances applied to the skin to raise a blister), and blood-letting (the removal of blood by cutting a vein, using a leech, or applying cupping-glasses). These more controversial remedies were thought to function by purging the noxious humours from the body. Authors consistently warned against the use of these treatments, stating 'use not strong Remedies, nor bleeding, nor purging'.[77]

There were several reasons for this hierarchy of preference. Firstly, the former treatments were considered 'safe and gentle', 'innocent and simple', and 'not much receding from their [children's] Natural State'.[78] In this period, the best medicines were thought to be those which matched the patient's natural constitution; as the child's constitution was 'tenderness and weakness', it made sense to choose medicaments of a similarly mild quality.[79] In addition, these remedies were relatively painless and 'in no way noisome … to Children'.[80] By contrast, the latter remedies—the evacuative and surgical treatments—were potentially dangerous. Pechey declared that 'Children by reason of the weakness of their bodies, cannot under go severe methods or strong Medicines: They do not well bear bleeding, nor strong purges'.[81] These remedies were also painful, and therefore some practitioners felt it too cruel to administer such medicines. In 1686, Johaan Dolaus admitted that, 'Blisters may be drawn behind the Ears and on the Wrists' to cure children of epileptic fits, 'But because of the Torture, I never used them'.[82] Furthermore, doctors favoured the non-evacuative

[74]Pollock 1987, p. 93; Fletcher 2008, p. 59; Rieder 2003, p. 234. There are a few exceptions, however: Orme 2001, p. 108; Broomhall 2004, pp. 167, 182; Ritzmann in Muller (ed.) 2006, p. 32; Ritzmann 2005, p. 181, have all suggested that doctors were more cautious when treating children.
[75]Newton 2009 also examines 'lay' treatments of sick children, and shows that the same kinds of remedies were prescribed by medical practitioners and the literate laity.
[76]Except clysters, which acted as gentle laxatives.
[77]Sennert 1664, p. 233; Johnson 1700, p. 300; Dolaus 1686, p. 321.
[78]Harris 1693, p. 41; Primrose 1651, pp. 280, 284.
[79]Harris 1693, p. 41.
[80]Van Diemerbroeck 1689, p. 33.
[81]Pechey 1697, p. 15.
[82]Dolaus 1686, p. 332. A similar statement was made by J.S. 1664, pp. 46–7.

treatments for pragmatic reasons: young children often refused all other medicines, and therefore practitioners were left with little choice but to use these treatments. One anonymous author wrote that 'some … children … cannot be gotton to take any inward Medicine at all', and therefore he advised 'applying the Plaisters' instead.[83] Daniel Turner's book of clinical cases provides an example of just how troublesome children could be during surgical procedures. One particular infant, 'a Gentleman's Child', 'growing restless, as being held in the same Posture' during blood-letting, 'fell into a Fit of Crying and holding the Breath', which meant that he could not properly dress the wound afterwards. Consequently, the child 'lost a pretty deal of Blood' and turned very pale.[84]

Nonetheless, in the case of everyday medical practice, doctors did at times resort to using purgative and surgical remedies on infants. In the 1630s, Dr John Hall recorded in his casebook that he gave a baby boy, the son of one Robert Brooks, 'a Blister on his Neck' at the first appearance of convulsions; he then took away 'an ounce of blood'.[85] This difference between theory and practice may have sprung from the fear that without these drastic treatments, the gravely-ill child might die. N. Chamberlen stated that to deny infants these remedies 'tis not a tenderness but a cruelty … besides they can but die with Evacuation, and may live, having a chance for it; when without it in all probability they must die'.[86] Since evacuative remedies were thought to be more effective than non-evacuating treatments, it made sense to risk administering a potentially dangerous but efficacious remedy during serious illness.[87]

Whilst the non-evacuating remedies were the most popular treatments for all ages of children, older children were more likely to have been treated with evacuative remedies than younger children. Doctors consistently wrote that 'If the child … be older', or 'very big or strong', then vomiting, purging, or bleeding may be permitted.[88] The medical casebooks also contain many instances where older children were treated with these remedies.[89] Authors were often vague about what constituted an 'older' or 'bigger' child, but they occasionally stated that children over the age of six or seven fell into this category. The reason they were better able to bear these treatments than younger children related to their greater physical and mental strength.[90] However, the fact that these children were being treated with more powerful remedies does not mean that they were regarded as identical to adults, or were excluded from the concept of children's physic. As will become apparent in the following paragraphs, their treatments were adapted in various ways (though to a lesser extent than was the case with younger children).

The general principle of adaptation for children's medicines was summed up by Harris in 1693:

[83]Anon. 1670, p. 74.
[84]Turner 1714, pp. 339–40.
[85]Hall 1679, p. 270. See Newton 2009 for more examples.
[86]Chamberlen 1694, pp. 21–2.
[87]Kern Paster in Cowen Orlin (ed.) 2000, p. 197.
[88]Guillemeau 1635, p. 62; J.S. 1664, pp.10, 128–9.
[89]For example, see Hall 1679, p. 60; Glisson *et al*. 1651, p. 60.
[90]Guillemeau 1635, pp. 79, 37.

> If we … do desire to lay any sure Foundation for the curing of Infants Diseases; we should chiefly eye their natural tenderness and weakness. … For the more gentle and safe these Remedies are which we administer, the event shall the more certainly answer our expectation.[91]

Thus medicines had to be made gentle and safe. Four types of adaptation were recommended. Firstly, those which modified the quantity and quality of the medicine. The most common of these modifications was a reduction of dose.[92] Francis Glisson stated in 1651:

> It is obvious … that strong Vomits prescribed in a full quantity are not competible to Children. … Wherefore this kind of remedy ought not to be prescribed to Children without diligent precaution and circumspection … both the strength, quantity, and effeciacy of the Medicine are duly to be prepondred.[93]

Adaptations of this sort were recommended throughout the early modern period by doctors of all theoretical convictions.[94] Authors stressed the necessity of graduating the dose according to the age, size and strength of the child, thus reaffirming the impression that childhood was a multifaceted concept. Robert Pemell, a physician from Kent, stated that ‘If the child be of some reasonable growth, then you may give it … two drachmes to one ounce’ of his medicine for curing constipation, but ‘if it be young, you may give it half an ounce’.[95]

Another way in which medicines could be attenuated was by replacing stronger ingredients with milder ones. Regarding purges, ‘neither can there by any thing found that is naturally more unsafe and dangerous than *Aloes*’, declared Harris, ‘because of its intense *Heat*, and *fretting faculty*, which is most opposite to that tender Constitution’ of children. He recommended the use of rhubarb instead, reassuring his readers that ‘there are none more innocent, and that are more agreeing with Infants, than the well known and very much used Rhubarb, which pleasantly and safely doth remove the Subject matter of the Feavers of those tender ones’.[96]

A second group of adaptations related to the method of medicine administration. Instead of taking the medicine independently, the child had to be aided by family members, nurses or doctors. ‘Children are helpless, or not of Understanding to know what is necessary for their Health … and this I look upon to be the Parents Duty … with utmost Diligence, in exactly performing what is necessary, to the utmost of their Skill and Ability’.[97] Thomas Sydenham stated that whereas the adult patient should, ‘anoint his Arms and Legs, with his own hand, for three nights together’, in the case of children suffering from the rickets, the parent must ‘anoint the Belly, and the parts under the short Ribs’.[98]

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[91] Harris 1693, p. 41.
[92] Historians have occasionally recognised this kind of adaptation: Rieder 2003, p. 234; Churchill 2005, p. 18.
[93] Glisson *et al*. 1651, pp. 326, 362.
[94] For an example of a chemical physician, see Sylvius 1682, p. 37.
[95] Pemell 1653, p. 39.
[96] Harris 1693, pp. 124–5, 64.
[97] W.S. 1704, p. 34.
[98] Sydenham 1695, pp. 69, 76.

Another way in which the administration of medicine differed for children was in terms of physical positioning. Whereas grown-up patients usually lay on a bed or sat in a chair whilst undergoing treatment, infants and small children were more likely to be held in somebody's lap. In the early 1700s, Turner noted that he placed his six year-old patient 'upon the Nurse's Knee', 'against [her] Bosom' when attending to the boy's bandages following an operation.[99] He had worried that the child would be 'froward' (irritable) and therefore asked the nurse who was holding the child to 'keep his Head steady' and 'strongly supported' whilst carrying out the difficult operation to the child's skull.[100] Holding the child in this manner may have also provided comfort during what was potentially a frightening or painful procedure.

Other differences in the way children's medicines were administered related to particular treatments. Vomiting, for example, was usually induced in adults by drinking a potion that contained bitter ingredients. However, in children, a manual method was often preferred. 'Tis good to make the child vomit either by putting your finger in the throat of it, or by putting down a feather anointed with oyl, or by some other light and easie means', suggested Pemell in 1653.[101] The rationale for this adaptation was that it was safer. Whereas internal vomits might induce multiple evacuations, thus harming the tender body of the child, a manual method gave the practitioner exact control over the number of vomits. Furthermore, the manual method was easier to carry out, for it did not involve trying to persuade the child to swallow an unpleasant liquid.

Doctors tried to make medicines 'grateful & pleasing to the sick Child, & such as … trouble not its Pallate'.[102] This was achieved through the substitution of bitter or unpleasant ingredients by substances of a more agreeable flavour. Pemell warned that wormwood or scordium 'are so bitter, children will hardly take them', and therefore he suggested that 'you may give them' instead 'the juyce of Lemons or Citrons', which were more pleasant.[103] Children were particularly sensitive to bitter tastes, because the 'teats' of their tongues (the regions responsible for taste), functioned most acutely.[104] However, as children grew older, they were more likely to be given the less palatable medicines. Pechey, for example, stated that children who 'are well grown' could be persuaded to take 'Aloes', although young children 'will not take any such thing'.[105]

Where the use of unpalatable medicines was unavoidable, practitioners often tried to disguise the taste by putting the medicine into the child's normal food or drink. 'Knowing that children are nice [fussy], and can scarce be prevailed with to take even the smallest … doses' of bitter medicines, Franciscus Sylvius suggested that 'these may be given in their milk or drink, they may be better beguiled; scarce discerning them'.[106] Medicines could also be 'sweetend with Sugar' or some other favourite ingredient.[107] Glisson insisted that

[99]Turner 1709, pp. 8–11.
[100]Turner 1709, pp. 8, 11, 34.
[101]Pemell 1653, p. 31; Culpeper 1662, p. 245.
[102]Glisson *et al*. 1651, p. 344. Laypeople also made use of this adaptation—see Newton 2009.
[103]Pemell 1653, p. 43. A similar statement was made by Pechey 1697, pp. 123–4.
[104]Van Diemerbroeck 1689, pp. 489–91.
[105]Pechey 1697, pp. 123–4.
[106]Sylvius 1682, p. 143.
[107]Pechey 1697, p. 75.

'some pleasant and agreable Liquor, or … candid Cherries, or preserv'd Barberries' should be added to medicines for curing rickets because the child 'delights … in such things'.[108] The reason so much emphasis was placed upon making medicines pleasant was to ensure the remedy 'do[es] not nausiat the Ventricle with such an ingrateful tast[e] and f[l]avour as may render an abhorrence from all future Medicaments'.[109] Perhaps practitioners also sought to make the experience of patienthood as pleasant as possible for children.

Historians have frequently claimed that pain relief 'was not a primary part' of medicine's 'rationale' during the early modern period.[110] However, when it came to infants and children, this was not the case, for doctors consistently stated that their priority was to 'First abate Pain'.[111] Eucharius Roesslin, for example, suggested that 'if the child have great paine and dolour' in the ears, then 'seeth Organie and Myrrhe with oyle Olive, and so beeing warme, put of it into the eares'.[112] This preoccupation with pain relief was rooted in the belief that pain was particularly damaging to children owing to their extreme sensitivity.[113] To achieve the analgesic effect, certain ingredients had to be added to the medicines, such as poppies or opium, the oil of roses, lupines, mallows, lettuce, juice of porcelain, and nightshade.[114]

Another way to lessen the pain of the illness was to distract the child. Mauriceau suggested that infants suffering from painful teething should be given a 'Silver Coral, furnish'd with small Bells, to divert the Child from the Pain it then feels'.[115] In everyday practice as well as in the medical treatises, young patients were distracted in this way. Four year-old Betty Egleton, for example, was often carried 'to the Window [to watch] some Children at Play in the Street' in 1705, in order to 'divert her' from her pains.[116] To ease the pain of medical treatment, practitioners applied remedies with great gentleness. When binding the limbs of 'crooked children', Wurtz entreated practitioners not to apply splinters 'too close … [nor] too hard', for this would 'cause great mischief' and make the child 'cryeth out by reason of the pains it feels'. Instead, the bindings should be applied 'softly and gently', with 'good notice' being taken of any 'pains, redness, smartings, blewishness or … swelling' appearing around the joints.[117]

However, sometimes there was nothing doctors could do to alleviate the pain of medical treatment. Pechey stated that when children had 'scald head' (ringworm), 'you must … pull out the Hairs' of the head 'by the roots. … A pitch Cap is ordinarily used for this purpose … they keep it on some days and afterwards pull it off with the Hairs'. He admitted that this was a 'severe' treatment, but could offer no advice as to how the pain could be mitigated.[118] Nevertheless, although these practitioners felt unable to lessen the physical pain of these

[108] Glisson *et al*. 1651, p. 328.
[109] Glisson *et al*. 1651, p. 327.
[110] Porter and Porter 1989, p. 163.
[111] Sennert 1664, p. 263.
[112] Roesslin 1613, p. 171.
[113] Wurtz in Ruhrah (ed.) 1925, p. 205 discussed children's sensitivity to pain.
[114] Pechey 1697, pp. 135–6.
[115] Mauriceau 1710, p. 343.
[116] E.C. 1705, p. 17.
[117] Wurtz in Ruhrah (ed.) 1925, pp. 213–14.
[118] Pechey 1697, pp. 57–8.

treatments, they sometimes did attempt to limit the emotional pain. When Turner realised that he would need to apply a ‘red hot’ tobacco pipe to seal the wound in a child’s neck and stop it from bleeding, he decided to conceal this from the child and his nurse until the very moment of its application, in order to cause the patient minimum distress.[119]

Thus far, it has been argued that children’s medicines were modified in various ways to make them more suitable for this tender age. However, there were some occasions when no adaptations were made. In 1562, Ruscelli recommended pills for curing coughs, which contained agaric, frankincense and hyssop, and pronounced that ‘It is a remedye very good, as well for yonge-children, as for olde folke’.[120] Over a century later, Robert Johnson suggested a purge which ‘may be safely given to Men, Women, or Children’.[121] The reason these remedies were unaltered was that they were thought to be so gentle that they could be taken by children in their exact form. For practitioners who were trying to advertise their own patented medicines, the motivation may have been commercial; they needed to attract as many customers as possible by presenting their treatments as cures for all ills and all patients. The fact the writers specified that children could take the medicine is in itself evidence of the existence of a concept of children’s physic: writers took for granted that their readers would assume that the remedies could not be given in their identical form to all ages.

Conclusion

Children were ‘like soft wax’ in medical opinion: they were tender, moist, and warm.[122] These humoral characteristics, which distinguished children fundamentally from other ages of human beings, underpinned every element of children’s dispositions, from their minds and emotions, to their diseases and treatments. The child’s humoral distinctiveness is strong evidence of the existence of a concept of ‘children’s physic’ amongst doctors and medical authors. It also challenges Ariès’ assertion that the idea of childhood was only beginning to emerge in the seventeenth century, since humoral medicine dated back to ancient times. Finally, the existence of this concept highlights the importance of age more generally in early modern medicine. Historians, while examining how gender featured in ‘models’ of human bodies, have rarely considered age as a category of differentiation.[123]

Nonetheless, children’s distinctiveness should not be exaggerated, for there were many physiological commonalities shared by all ages of human beings: children’s bodies, diseases and medicines were viewed through the usual lens of Galenism. Furthermore, children were not all identical, but differed according to their age, individual strength and weight, and to a lesser extent, their gender. These factors played a part in determining the precise range of diseases to which each child was most vulnerable, as well as impacting on the causes of disease and the manner in which children were treated. Of all these variables, gender seems to have featured least frequently: doctors rarely distinguished between girls and boys when

[119]Turner 1714, p. 340.
[120]Ruscelli 1562, p. 7.
[121]Johnson 1700, p. x.
[122]Wurtz in Ruhrah (ed.) 1925, p. 366.
[123]Laqueur 1990; Duden 1991; Pomata in Finucci and Brownlee (eds) 2001. Churchill 2005, however, has considered other ways besides gender by which bodies were conceptualised.

describing children's constitutions, disease causation, and medical treatment. This was because the defining characteristics of children in medical opinion were their moisture and weakness, qualities shared by both sexes. The relative insignificance of gender, which I hope to discuss at greater length in a future article, is important because it is another way in which children were distinguished from adults, since medical perceptions of adults were inextricably bound to issues of gender. It also has implications for the historiography of childhood and gender, since hitherto historians have assumed that from the age of seven, every aspect of children's lives were differentiated according to their sex.[124]

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[124]Fletcher 2008; Mendelson and Crawford 1998, pp. 77–8.

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