

人类生命过程中与自然互动的魅力

The Benefits of Nature Interaction Across the Life Course

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摘 要
近几十年来, 相关研究对大自然在恢复健康方面的作用做了持续、深入的探索, 花园和园艺疗愈项目也逐步发展起来。大量研究印证了大自然可以疗愈人在身体、情感、认知和精神上的症状, 同时增强身体机能。在当今快节奏的生活和工作中, 亚健康人群数量不断增加, 人们可利用自然疗愈环境来改善健康状况。基于此, 探讨了人生历程中4个重要阶段遇到的挑战和压力来源: 童年时期、成年初显期、中年时期和成年后期。每个阶段的健康状况和影响健康的因素是不同的, 然而将自然带入生活的积极益处不会改变, 其可以在每个生命阶段帮助人类增进健康与幸福, 增进社会交往。
关键词
园艺疗愈; 自然疗愈; 人生历程; 健康; 康复花园; 自然互动

Abstract
In recent decades, a great deal has been learned about the power of nature in restoring health and wellness. As a result, many gardens and gardening programs have been developed to serve needy populations. Increasing evidence shows that nature can help heal and strengthen people physically, emotionally, cognitively, and spiritually. The number of sub-healthy people is increasing in today's fast-paced life and work. This ever-growing population can also use gardens and nature to improve their health and wellness. This chapter explores challenges and stressors at four critical stages along the life course: childhood, emerging adulthood, middle age, and late adulthood. The health and wellness challenges are different at each stage as life course trajectories shift. The positive benefits of bringing nature into one's life do not change, however, and can increase health and wellness and connection to others and the community at each stage.
Keywords
horticultural healing; natural healing; the course of life; health; rehabilitation garden; natural interaction

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1 健康福祉的概念界定
《牛津词典》(2018年) 将健康定义为“处于良好的健康状态, 尤其指有着积极的生活目标。”世界卫生组织(1948年) 将健康定义为“一种身体、精神和社会状态完全健康的状态, 而不仅仅是没有疾病或身心虚弱。”美国健康咨询公司Wellness Proposals(2018年) 把健康归为“能意识到并学会做出选择的积

极过程, 这些选择的结果将导致更长寿、更成功的存在。”虽然这三个定义都是相关的, 但第三个定义尤其与本文的讨论相关。“意识”推断出一个人可以寻求进一步的知识, 而“选择”表明一个人考虑了许多选项, 并选择了最好的选项。这一定义强调, 健康不是一个目的地, 而是一个不断变化的人生旅程。
健康与许多产品和服务有关, 如健康中

心、健康指导和健康计划。回顾历史,古代许多医药文化在给健康下定义时,都试图平衡协调思想、身体和精神三个层面。古希腊希波克拉底(公元前460-377年)提出了健康生活的原则,例如“让食物成为你的药物,药物成为你的食物”“步行是人最好的药物”等,这些箴言也与如今的想法不谋而合^[1]。瑜伽起源于5 000年前的古印度,是一种以冥想和正念为核心的身心健康运动^[2],直至今天,瑜伽也被视为促进人类健康的重要组成部分。古代中国是整体医学体系的发源地,该体系主要包括草药、饮食、针灸和气功,是一种内部能量管理系统^[3-4]。19世纪后期,美国创立了脊椎疗法和整骨疗法,19世纪40年代,德国创立了顺势疗法和自然疗法,疗养院在这段时期有了蓬勃发展。1906年,约翰·哈佛·凯洛格在密歇根州巴特克里克开设了一家疗养院,他认为良好的户外空气是健康的基础,鼓励患者在户外睡觉^[5]。然而,1910年发表的美国家弗莱克斯纳报告(Flexner Report)^[6]认为,以化学药物为基础的“对抗疗法(Allopathic Medicine)”是优于其他以天然健康为基础的方法,这是美国不再重视传统的自然生活方式对保持健康重要性的开始,“全人健康方法(The Whole-person Approach)”不再是必要的,而基于症状和药物的治疗方法占据了主导。这种医疗系统,被一些人称为“疾病文化”,随后持续了近100年的时间。

2 “疾病—健康连续体”模型

弗莱克斯纳报告发表60年后,约翰·霍普金斯大学的一名住院医师,约翰·特拉维斯博士(Dr. John Travis)提出了关于健康的“疾病—健康连续体(Illness-Wellness Continuum)”模型^[7]。在特拉维斯的图表中,从连续体的中心向左侧移动表明健康状况恶化,向右移动

表明健康和幸福水平提高。根据特拉维斯的说法,“对抗疗法”只能使患者的疾病症状得到缓解。健康范式可以在连续体的任何一点上使用,帮助患者彻底改善身心健康状况。在这张图表中,健康的一个重要方面是自我责任,因为人需要为自己的健康和幸福负责。

基于特拉维斯博士的早期工作,使得人们对于健康的认知逐步又回到了“全人健康方法”的模式,在医疗保健项目、媒体宣传中都能体现出来,在美国健康文化中也越来越受到欢迎。

3 不同生命历程视角与自然的互动

生命历程视角是一种生活理论模型,这种模型考察了实际年龄、人际关系、常见的生活转变和社会变化如何影响人的一生等。这一视角探索了在每个生命阶段影响一个人经历的不同生活因素,它可以用来观察健康、教育和家庭生活轨迹等。生命历程似乎是一条布满曲折的道路。每个人都经历了许多人生阶段,例如上学、找第一份工作、结婚、应对大病、退休等等。这些经历会让人走上一条通往某个结果的特定轨道,这一轨迹将持续下去直到另一个转变发生,继而转向新的旅程。

生命历程视角可描述为一个理论框架,用于探索人生中面临的主要问题和挑战,以及如何利用自然来支持和加强与特定生命阶段有关的健康福祉。本文将详细阐述生命历程的4个不同阶段(童年时期、成年初显期、中年时期和成年后期)与自然互动的健康益处。

3.1 自然互动对童年时期的影响

威尔逊(E.O. Wilson, 1986年)的“亲生物理论(Biophilia Theory)”被广泛认为是揭示人与

植物密切关系的重要理论。该理论认为,人类对自然界有一种天生的亲和力。然而,在过去的20年里,家庭生活和现代科技发生了巨大的变化,儿童花在电子屏幕前的时间比在外面玩耍的时间多得多。

美国国家野生动物联合会(2010年)的一项研究显示,美国孩子平均每天只花4~7 min进行无组织的户外游戏。最近的一项研究报告显示,英国0~8岁的孩子每周在电子屏幕前花费15~16 h^[8],而8~12岁的孩子则花费约42 h^[9]。儿童在公园、农村或沿海等自然地区的平均休闲时间为16 min/d^[10]。如果孩子们小时候不与自然接触,对自然的亲缘度就会降低,甚至会对自然产生厌恶,长大后就很难选择用自然促进健康。

大量研究表明,大自然对儿童身心健康具有积极影响。2012年的一项研究发现,花园是儿童最佳的发展区域,每天接触大自然可以提高孩子的注意力、增强认知能力。自然游戏对培养解决问题的能力也很重要,经常在户外自由玩耍的孩子会与他人相处得更好,更快乐^[11]。参加户外科学项目的儿童考试成绩提高了27%^[12],在一年中大部分时间里接触到更多绿色环境的小学生,学习成绩也会更好^[13]。也有研究表明,接触大自然对理解生物学知识有非常积极的影响^[14]。

Bell和Dymont^[15]的研究表明,在花园里种植食物的孩子更喜欢吃水果和蔬菜,他们一生都有健康的饮食习惯。增加校园绿量也能促进学生进行体育锻炼:瑞典的一项研究发现,在宽敞的校园里,有乔木、灌木、花草和非硬质景观的地面时,学龄前儿童的步数明显增多^[16]。研究还表明,童年与自然的互动,特别是与野生自然的互动,可能会让孩子走上成人环保主义的人生轨迹^[17]。Chipeniuk^[18]发现在童年时期有过觅食活动的人,

在青少年时期对生物多样性会有更好的了解。

童年自然经历的另一个重要作用是帮助建立与自然和其他人的关系。例如，在年老时回想起捕捉萤火虫的活动，有助于老人保持对自然世界的积极态度，同时也有助于提升认知功能。此外，用语言表达这些记忆会促进社会互动和与他人的联系，这是人获得幸福的重要组成部分。

孩子们的户外时间是很重要的，其中一些是有组织的时间，而大部分空闲的时间可以用来探索和发现事物。在这个生命阶段，无组织的户外时间可能比有组织的户外时间更有价值。有什么方法可以让孩子们接触大自然呢？比如创建一个藏身处，或者在灌木丛下找到一个特殊的空间。这需要有解决问题的技能来建立或发现空间。如果是和兄弟姐妹或朋友一起玩，就需要团队合作，发挥创造性和想象力。孩子们可以玩一些自然游戏，比如寻找10种动物，如鸟类、昆虫等；也可以在黄昏时分捕捉萤火虫，在黎明时分释放它们；或者喂养毛毛虫，观察它们把叶子吃出洞的过程；也可以穿上雨靴或赤脚踩水坑。让“绿色时间”成为一个新的家庭活动时间，每天的“绿色一小时”是一段与自然世界互动的玩耍时间，即使只有15 min，也是一个探索周围新事物的好开始，在确保安全的情况下，鼓励孩子们进行一些独立的探索（图1）。

3.2 自然互动对成年初显期的影响

“成年初显期”是一个特殊的发育阶段，年龄范围18~29岁，指不再是青少年、但还没有完全成年的青年。成年初显期是一个频繁变化的时期，对人际关系、工作和世界观的各种想法都在探索。对爱情的探索有时会失望。在工作中的探索有时会导致无法得到最想要的工作，或者无法找到令人满意

的工作。对世界观的探索有时会导致对童年信仰和家庭价值观的否定。对于初显成年人来说，与自然的联系是一种宝贵的工具，为他们在身份发展的过程中导航，制定个人目标，并发现身心健康在他们生活中的重要性。

一个人的价值目标或人生抱负影响其人生决定和人生道路。成年初显期是价值目标成型的时期，开始与特定的原因或价值观联系在一起，主要有两种愿望：内在的和外在的。内在愿望指的是重视个人成长、社区参与、人际关系和身体健康等；外在的愿望看重金钱、名誉和形象等。研究表明，这两种愿望与幸福的关系不同。2009年，一项针对大学毕业后样本的研究发现，那些重视并实现内在抱负的初显成年人更有可能表现出积极的心理健康，而那些重视并实现外在抱负的成年人则少有表现出积极的心理健康。事实上，外在愿望的实现与不健康的指标呈正相关^[18]，将这些发现与自然联系起来，另一系列研究^[19]探索了这样一个假设，即接触自然环境的人会出现一种更内在的价值观，与他人的联系更紧密。这些研究的对象平均年龄为20岁，研究表明，受试者越沉浸在自然环境中，他们的内在愿望就越强烈，而沉浸在非自然场景中，会导致重视外在的愿望，贬低内在的愿望。另一项研究评估了沉浸在自然环境中是否会影响受试者的慷慨程度，这是基于受试者选择保留或赠送5美元的礼物^[19]，研究结果显示，越是沉浸在非自然场景中的受试者越不慷慨，而且更有可能把钱留给自己；喜欢沉浸在自然场景中的受试者更有可能做出慷慨的决定，把钱捐出去。这两项实验之后又进行了类似的研究^[19]，使用有植物或没有植物的实验室环境，而不是自然场景，结果是相同的。总的来说，这些研究表明，沉



图1 童年时期亲近自然的活动
Fig. 1 Activities close to nature in childhood

浸在大自然中会通过培养更强的联系，如亲社会或慷慨的行为，来产生人性化的效果。

Guéguen和Stefan^[20]测试了接触自然对社会行为和关系的影响，这是成功引导即将到来的成年生活阶段的重要组成部分。研究者在城市绿地公园散步时故意掉落手套，随后观察路人是否会捡回手套并把它归还原主。研究人员发现，如果路人是沉浸在公园环境之后看到手套掉了，他们更有可能把手套物归原主，沉浸在公园环境中与情绪的增加和帮助他人的愿望成正相关。研究表明，在自然的绿色环境中短暂的沉浸足以引发积极的社会关系，特别是增加帮助行为，即使是对陌生人。

如上所述，重视并实现内在的愿望——个人成长、社区参与、积极的人际关系、帮助他人，更有助于身心健康。在刚刚成年的阶段认识到这一点尤其重要，因为这是价值探索和归属发生的阶段。应该鼓励初显阶段的成年人重视内在的愿望，与大自然的丰富接触恰恰有助于实现这一点。接触绿色的自然环境可以产生人性化的效果，鼓励亲社会，关心和慷慨的态度，而不是纯粹的自我导向。这些内在的态度都有助于塑造自身健康的特征，同时也创造了一种价值取向，使初显阶段的成年人在走向下一个重要人生阶



图2 成年初期亲近自然的活动
Fig. 2 Activities close to nature in emerging adulthood

段时,能够步入持续健康的轨道。对于孩子,如果自然是他们生活中重要而常规的一部分,那么继续运用自然作为健康的工具就会更容易,但如果电脑和电子游戏主导了他们的童年,社交媒体主导了他们现在的生活,那么向自然的过渡就更具挑战性。

社区服务和志愿服务正在兴起,并已成为学生生活的重要组成部分。寻找主要在户外的志愿服务或社区服务工作是接触自然的好方法,同时,维护和恢复公园、自然保护区和自然区域的机会也很多。可以在公共花园、社区花园或越来越多的小型有机农场和合作社做志愿者工作;或者在小学建造和维护菜园,在老年人中心或辅助生活设施建造维护花园(图2);自然俱乐部、儿童营和童子军团体也是接触人和自然的机会。这些不仅都是与自然联系的场合,也是亲社会、亲社区的行为,是表达内在价值的场合。有研究表明,这些绿色运动比室内运动更加有益^[21]。

最后,对健康的自我意识和自我责任从这个人生阶段开始,对于初显阶段的成年人来说,认识到并掌控自己的健康之旅非常重要。

3.3 自然互动对中年时期的影响

《牛津英语词典》将中年定义为“青年和老年之间的一段时期,通常被认为是在45~64岁之间”。从身体的角度来看,中年人正处于逐渐衰老的过程,某些疾病开始出现,如癌症、糖尿病和高血压。从家庭生活的角度来看,中年人多在工作、家庭和人事务之间周旋,总是很忙碌。或正在进入空巢期,与孩子分离,这也意味着正承受为孩子支付大学学费的压力,或照顾父母的身体,经济压力。另外,中年人多数会承受很大的工作压力,也会质疑自己的职业选择,对工作感到不满,想做点不一样的事情,而这些都是常见现象。但是家庭经济的责任会阻止个人在这个人生阶段冒险做出改变,甚至会质疑生命的意义。在这一阶段还可能发生一些影响重大的事件,包括配偶的严重疾病或死亡,父母的疾病或死亡,或自身失业。对大多数人来说,这个阶段是生活中压力最大的时期,也是身体、情感和认知上最疲劳的时期。在2011年对72个国家的一项研究中,大多数受访者表示,他们在40~50岁最不开心^[22]。另一项研究报告称,快乐和幸福在中年时有所下降,悲伤在中年时略有增加,担忧则在中年时达到顶峰^[23]。当然,人到中年也有一些好处,数据表明,人们在50~60岁时死亡的可能性比他们生命中的任何其他时候都要小^[24]。在工作场所如办公室、建筑工地、运动场和教育场所等掌握权力的通常是中年人,在这个阶段,人们往往对自己更满意,且不太在意别人的评价。然而,在该人生阶段的人,在财务上可能更自由。

对许多人来说,中年是人生中最强大的时期,只有他们能在重度疲劳和高压环境面前专注于自己的健康需求。就健康而言,中年的三大担忧是压力增加、疲劳增加和幸福

感下降,而大自然可以治愈这些问题。

每个人都知道疲劳或不快乐的感觉,习惯性的疲劳和不快乐会影响一个人的身心健康。许多中年人并不患有糖尿病、心脏病或癌症等特定疾病,也没有帕金森症、躁郁症或身体残疾,但也没有处于想要的健康阶段。他们希望自己变得更强壮,更有弹性,充满活力,但这个时期的障碍主要来自于压力,即在工作和家庭中都要面对的一种无形的疾病。2006年,世界卫生组织将压力确定为一个日益严重的全球问题,是引发心脏病、二型糖尿病和抑郁症等疾病的风险因素,也是过早死亡的主要原因。研究表明,压力以许多不同的方式影响身体的器官,如果这种压力长时间存在而没有得到释放,身体的器官就会以有害的方式做出反应。压力也会导致精神疲劳,随之而来的是思考、学习和社交能力的下降^[25]。换句话说,如果人们不能从压力中解脱,可能会对健康产生重大的负面影响。调查显示,加拿大超过70%的成年人压力过大,这种情况对卫生保健系统和经济造成严重影响,基于与压力相关的疾病,加拿大雇主每年因此损失约200亿加元,这也是病假的头号原因。

通过自然来治疗压力的方法深受欢迎,接触自然可以有效减轻压力^[26]。瑞典阿尔纳普的一个干预项目已经将这些证据用于治疗与压力有关的疾病,并作为一种医学上公认的诊断。有数据表明,参加阿尔纳普自然康复的人,其严重的压力症状有了显著变化,增加了重返工作的机会^[27]。许多参与者表示,他们有意利用自然来恢复精神并放慢节奏^[28]。

阿尔纳普的另一项定性研究表明,花园本身不仅是一个缓解压力的良好环境,还可以用作实验基地,改善人的日常功能、提高健康水平^[29]。特别是在美国,许多人不得不

依靠药物来帮助改善身心健康问题。其实,自然和社区的绿地就像任何药物一样,人们应该走进大自然,从大自然中受益^[30]。如果更多的人愿意将园艺手套或运动鞋作为缓解压力的处方,也许社会健康会进入更好的良性循环。公司可以鼓励员工享受绿色休息时间,并为员工报销公共花园会员等费用,将是对员工福利的明智投资。

如果说培养与自然的联系能够促进幸福生活,那么中年人该如何增加接触自然的机会?这个生命阶段的人非常忙碌,过度承诺,经常不知所措、身心疲惫,从小处着手是个好方法:明确目标,把它们写下来,然后坚持到底。在工作日,到外面的树下休息一下;主持步行会议;在午餐时间,放下手机,去城市公园或其他绿地寻找野生动物、有趣的植物或自然景观。养成饭后散步的习惯,休息日去公园走走,听听鸟叫声,观赏花草树木等。或者,在当地绿化组织担任志愿者,这是对个人和社会都有好处的行为。总之,生活在城市环境中的人们需要在大自然中寻找微观体验,比如城市公园、口袋公园、绿色走廊、绿色室内和中庭。

3.4 自然互动对成年后期的影响

最后一个需要探索的人生阶段是成年后期。成年后期通常被认为是从65岁开始,一直持续到生命的结束,这个人生阶段通常与退休相联系。对许多人来说,在成年后期会面临重大挑战,身体上的挑战通常包括体质下降,如关节僵硬和疼痛,视力和听力下降,感官的敏感度下降,认知和身体反应时间变慢,记忆衰退。

抑郁症被认为是老年人中最常见的精神问题,尤其是那些与社会联系更少、更孤立的老年人。Serani^[31]报告称,15%的老年人患

有重度抑郁症,25%的老年人患有亚临床抑郁症。因为衰老的过程往往与社会角色的逐渐丧失有关,特别是在美国,社会联系对老年人尤其重要。与邻居密切的社会关系有助于为老年人提供新的社会角色,这可以提高他们的幸福感。

在这个生命阶段的三个主要问题是身体功能下降、社会角色降低、患抑郁症的几率增加或病情恶化。对抗衰老的理论之一是活动理论^[32],认为一个人必须积极地保持高质量的生活状态。在日本农村的一项研究调查了老年人外出的频率^[33],研究发现,即使在控制基线差异的情况下,那些经常外出的人在功能和智力活动方面都表现出最大的改善,在日常活动和促进健康方面的自我效能也有了最大的提高,很少出门的人得分迅速下降。研究还揭示了老年人户外活动对身体的好处,美国的一项大规模研究发现,与那些只走短距离的人相比,经常走较长距离的老年妇女在未来6~8年内不太可能出现认知能力下降^[34]。一项针对瑞典老年人的为期9年的研究发现,那些经常参与社会活动的人认为他们的生活状况更好^[35]。在退休社区中,经常在户外体育活动中花费超过30 min的老年人不太可能有抑郁症状或害怕摔倒^[36]。D'Andrea等^[37]发现,园艺可以鼓励痴呆症患者参与活动,并改善他们的情绪。那些参加了7周园艺计划的老年人心理健康有了显著改善。荷兰的一项研究表明,社区绿地的数量与老年人的健康状况呈正相关^[27]。附近开放空间的绿化数量与老年人使用的频率有关,促进了他们之间更强的社会联系^[38]。

有什么方法可以让老年人接触大自然呢?提供安全的户外通道是至关重要的,有助于减轻老年人外出的恐惧,参加活动团体的机会可以帮助老年人接触大自然,例如,



图3 成年后期亲近自然的活动
Fig. 3 Activities close to nature in late adulthood

一个观鸟小组,一个园艺或户外手工艺小组。或者户外品茶是很好的社交机会,也可能为痴呆症患者提供熟悉感。越来越多的老年人参加户外瑜伽课程、太极和水中有氧运动,这都有助于促进健康^[22]。社区花园是很好的户外环境,它们提供了一个种植食物和鲜花、锻炼身体、与新老朋友聚会和社交的地方(图3)。户外散步也是一项很好的活动,有研究表明在美丽的自然环境中散步和沉思能带来一种平和的感觉,有助于缓解抑郁。

4 结论

无论健康与否,与自然的互动都是有益的。无论在生命的哪个阶段,自然都是不可或缺的伙伴。大自然具有增强创造力、合作和解决问题的能力,也有助于注意力和认知能力的加强。自然环境能够减轻疲劳和压力,增加活力、快乐、平和以及与社会的关系。本文将大自然特定的好处与生命历程中的不同阶段联系起来,但这些大自然的馈赠无疑在不同的生命阶段都是存在的,在每个阶段都让人受益匪浅。

大自然提供了一个空间,在这个空间里,

一切都可以自由地感知和表达。大自然缓解不良情绪和痛苦，使得人探索在日常生活中找不到的自在空间；大自然的纯粹和多样之美使人对生命和周围环境产生敬畏。

注：图1由Filip Urban摄，图2由Jake Melara摄，图3由Centers for Disease Control and Prevention (CDC) Public Health Image Library提供。

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1 Definition of Wellness

The Oxford dictionary (2018) defines wellness as: "The state of being in good health, especially as an actively pursued goal." The World Health Organization (1948) defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Wellness Proposals (2018), an American wellness consulting company, defines wellness as "an active process of becoming aware of and learning to make choices that lead toward a longer and more successful existence". While all three definitions are pertinent, the third is especially relevant to this discussion. The use of the word process is a reminder that further improvement is always possible; aware infers that one can seek further knowledge, and choices suggests that one considers many options and chooses the best options. This definition highlights that wellness is not a destination, but rather a continuous journey that changes as people change and move through the inevitable life stages.

Wellness is a popular term and used in association with many products and services: wellness centers, wellness coaching, wellness programs, and wellness products, to name a few. Looking back in history, many ancient cultures used systems of medicine that also focused on the whole person in an attempt to balance mind, body, and spirit. Hippocrates (460-377 BC) developed principles of healthy living in ancient Greece that resonate with us today: "Let your food be your medicine and medicine be your food" and "Walking is man's best medicine" ^[1]. Ancient India is the birthplace of yoga, a system of physical exercise with a meditative and spiritual core that began 5 000 years ago^[2]. Today, yoga is fully embraced as a component of wellness. Ancient China was home to an incredible system of holistic medicine, including herbal medicine, diet, acupuncture, and qigong; a system of internal energy management^[3-4]. Chiropractic and osteopathy were founded in the U.S. in the later 19th century, and

homeopathy and naturopathy came from Germany in the 1840s, and Sanitariums flourished during this time. John Harvey Kellogg opened a sanitarium in Battle Creek, Michigan in 1906. He thought that exposure to the sun and open air were considered fundamental to good health, and patients were encouraged to sleep in the open air^[5]. In 1910, however, the Flexner Report was published in the U.S.; a report whose purpose was to determine the most effective system of medicine^[6]. Allopathic medicine, based on chemical drugs, was considered to be superior to the other natural health-based methods and an important component of this was the potential to mass produce chemical drugs. This was the beginning of the decline of American focus on the importance of lifestyle in maintaining good health. No longer was the whole-person approach essential, but rather the symptom-based, drug-based approach. This medical system, called by some the "culture of illness" would continue for 100 years.

2 Illness-Wellness Continuum

Sixty years after the Flexner Report was published, Dr. John Travis, then a medical resident at Johns Hopkins, developed a new concept regarding health that he called the Illness-Wellness Continuum^[7]. In Travis' diagram, movement from the continuum's center to the left side indicates a deteriorating state of health. Moving from the center to the right signifies increasing levels of health and well-being. According to Travis, allopathic medicine, or the treatment paradigm, can only deliver a patient to the neutral point where the symptoms of disease have been alleviated, because that is all the system is designed to do. The wellness paradigm, which can be employed at any point along on the continuum, helps the patient to move toward higher levels of wellness. One of the important aspects of wellness inferred in this diagram is self-responsibility as there is an increasingly greater need for individuals to take responsibility for their own health and wellness.

Today, in large part because of Dr. Travis' early work, the trend has come back to the whole person approach of health. This can be seen in healthcare programs, the media, and increasingly in American culture.

3 Life Course Perspective

The life course perspective is a theoretical model that examines how chronological age, relationships, common life transitions, and social change shape people's lives throughout life. This perspective explores the different life factors affecting one's experience at each life stage, and it can be employed to look at health, education, and family life trajectories, among others. The life course can be thought of as a path, but rarely a straight path; instead it almost always includes twists and turns. Each person experiences a number of stages marked. Examples include starting school, obtaining a first job, getting married, dealing with a major illness, and retiring, among others. These experiences set a person on a particular trajectory toward an outcome. This trajectory will continue until another transition occurs, which results in a shift to a different trajectory.

The life course perspective is a useful framework for exploring the major issues and challenges present along the life course, as well as how nature can be used to support and strengthen wellness as it relates to particular life stages. In this chapter the benefits of nature interaction will be identified at four distinct stages throughout the life course; childhood, emerging adulthood, middle age, and late adulthood.

3.1 Children

E.O. Wilson's biophilia theory (1986) is widely regarded as the foundation for the people plant connection. The theory states that humans have an innate affinity for the natural world. However, family life and technology has changed dramatically in the last two decades, and children now spend much more time

in front of screens than they do playing outside.

Some alarming research by the National Wildlife Federation (2010) revealed that the average American boy or girl spends just four to seven minutes in unstructured outdoor play each day. A more recent study reported that 0~8 years old in the UK spent 15~16 hours per week in front of an electronic screen^[8], while those between 8 and 12 years old spend an average of about 42 hours per week in front of a screen^[9]. The average amount of leisure time children spent in natural areas such as parks, the countryside, or coastal locations was 16 minutes per day^[10]. If children are not engaging with nature and the natural affinity to nature is not given opportunity to develop during their early years, they may actually develop an aversion to nature. Children will not learn to use nature to contribute to wellness as they age.

There is a wide body of research on the beneficial effects of nature on children. A 2012 study found that gardens offered an optimal zone of proximal development for children. Daily exposure to nature increased children's ability to focus and enhanced cognitive abilities. Nature play is also important for developing problem-solving skills, and children who have regular opportunities for free play outdoors will get along better with others and be happier^[11]. Children involved in outdoor science programs improved their science test scores by 27%^[12]. A more recent study found that elementary students who had higher levels of exposure to greenness during most of the year demonstrated higher academic performance^[13]. Informal, direct exposure to nature has a positive influence on understanding biology^[14].

Children who grow food in the garden are more likely to eat fruits and vegetables according to research by Bell & Dymant^[15], and they have healthy eating habits throughout their lives. Green schoolyards can also promote physical activity: a Swedish study found that preschool children took a significantly higher

number of steps when the schoolyard was spacious and contained trees, shrubs, and non-hardscaped ground^[16]. Research also suggests that childhood interaction with nature, especially wild nature, may put a child on a life course trajectory toward adult environmentalism^[17]. Chipeniuk^[18] found that people who had engaged in foraging activities in childhood had better knowledge of biodiversity as teenagers.

Another important aspect of childhood nature experiences is that they support our relationship with both nature and other people much later in life. Reminiscing about catching fireflies as an older adult, for example, helps to maintain positive attitudes about the natural world while also supporting cognitive function & memory. Additionally, verbalizing these memories leads to social interaction and connection with others; a critical component of wellbeing for older adults.

It is essential that children have lots of time outdoors in nature, some of it structured time, but a lot of it unstructured so they can explore and discover things on their own. Research points to the idea that unstructured time in nature may be more valuable than structured time at this life stage. What are some ways to engage children with nature? Create a hideout – maybe something built or maybe a special space found under a bush. This engages problem-solving skills to build or clean out the space. It involves teamwork if made with siblings or friends, and facilitates creative and imaginary play. Nature games can be played on walks such as finding ten critters, be they birds, insects, or other creatures. Revive old traditions such as collecting lightning bugs at dusk and releasing them at dawn. Make a leaf collection or catch caterpillars in jars of leaves and watch them eat holes through the leaves. Put on rain boots – or better yet, go barefoot – and splash in puddles. Make the “green hour” a new family tradition. A daily green hour is a time for unstructured play and interaction with the natural world. Even just

fifteen minutes is a good start to explore a new spot around the house, and whenever safe, encourage some independent exploration.

3.2 Emerging Adulthood

Emerging adulthood is a term describing a distinct developmental period that covers the age range of approximately 18~29. This life stage category refers to youth who are no longer adolescents, but not yet fully adults. Rather, they are engaged in the developmental process of becoming adults. Because marriage and parenthood are delayed until the late twenties for many people these days, young adults are not expected to settle into long-term adult roles as soon as in the past.

Emerging adulthood is a time of frequent change as various ideas about relationships, work, and worldviews are explored. Explorations in love sometimes result in disappointment or rejection. Explorations in work sometimes result in a failure to get the job most desired or in an inability to find work that is satisfying and fulfilling. Explorations in worldviews sometimes lead to rejection of childhood beliefs and family values. Connection to nature is a valuable tool for emerging adults as they navigate this process of identity development, develop personal goals, and discover the importance of physical and emotional wellness in their lives.

A person's valued goals, or life aspirations, influence their life decisions and life path. Emerging adulthood is the time when many of these valued goals are taking shape and one starts to affiliate with particular causes or values. There are two main types of aspirations that are particularly informative— intrinsic and extrinsic. Intrinsic aspirations refer to placing importance on things such as personal growth, community involvement, personal relationships, and physical health. Extrinsic aspirations place value on things such as money, fame, and image. Research has shown that these two types of aspirations relate

differently to well-being.

A 2009 study of a post college sample found that those emerging adults who valued and attained intrinsic aspirations were more likely to report positive psychological health, while those who valued and attained extrinsic aspirations did not report positive psychological health; in fact, attainment of extrinsic aspirations related positively to indicators of ill-being^[18]. Relating those findings to nature, another series of studies^[19] explored the hypothesis that people who are in contact with natural environments will demonstrate a more intrinsic set of values, with a greater connection to and focus on others. These studies, whose subjects consisted of men and women with a median age of 20, Study demonstrated that subjects exposed to images of natural environments valued intrinsic aspirations and devalued extrinsic aspirations. The more the subjects were immersed in the natural settings, the greater their increase in intrinsic aspirations. Immersion in manmade scenes, on the other hand, led to valuing extrinsic aspirations and devaluing intrinsic aspirations. Another study assessed whether immersion in natural environments might influence generosity based on the subjects' choice to keeping a \$5 gift or give it away^[19]. Results of this study revealed that subjects who were more immersed in non-nature scenes were less generous, and more likely to keep the money for themselves. Subjects who were more immersed in nature scenes were more likely to make generous decisions and give away the money. These two studies were followed by similar studies^[19] using a lab setting with plants or without plants instead of scenes of nature, and the results were the same. Overall, these studies suggest that immersion in nature can have humanizing effects by fostering greater connectedness and pro-social and generous behavior.

Guéguen & Stefan^[20] tested the effect of exposure to nature on social behavior and relationships; an important component in the successful navigation

of the emerging adulthood life stage. The study involved people who would intentionally drop a glove while walking in an urban green park. Passersby were observed to see if they would retrieve the glove and return it to the person who dropped it. Researchers found that passersby were more likely to return the glove if they saw the glove dropped after their immersion in the park setting. Researcher concluded that a short immersion in a natural green environment is sufficient to elicit positive social relationships and specifically to increase helping behavior, even toward strangers.

Research, as stated above, reveals that valuing and attaining intrinsic aspirations — personal growth, community involvement, positive relationships, helping others — can contribute to wellness. This is especially important to recognize at this emerging adulthood stage because this is the stage at which value exploration and affiliation is taking place. Emerging adults should be encouraged to place value on intrinsic aspirations and rich contact with nature can do just that. Exposure to natural green settings can have a humanizing effect, encouraging pro-social, caring, and generous attitudes rather than pure self-orientation. These intrinsic attitudes are all characteristics that contribute to wellness in and of themselves, while also creating a value orientation that sets emerging adults on a trajectory of continued wellness as they move toward the next major life stage. If, as children, nature was an important and regular part of their lives, then it will be easier to continue to use nature as a tool for wellness. If computers and video games dominated their childhood and social media dominates their current lives, then the transition to nature may be more challenging.

Community service and volunteering is on the rise and is a big part of students' lives these days. Finding volunteer or community service work that is primarily outdoors is a great way to connect with nature: opportunities for maintaining and restoring

parkland, nature preserves, and natural areas are plentiful. Volunteer work at public gardens, a neighborhood community garden, or the growing number of small organic farms and co-ops is possible. There are opportunities to build and maintain vegetable gardens at elementary schools or raised bed gardens at senior centers or assisted living facilities. Nature clubs, children's camps, and scouting groups are other opportunities for connecting with people and nature. These are all occasions not just for connection to nature but also for expression of intrinsic values; pro-social and pro-community behavior and connection. These are all types of green exercise, which research has shown is more beneficial than indoor exercise^[21].

Finally, self-awareness and self-responsibility for wellness begins at this life stage and it is important for emerging adults to recognize and take ownership over their wellness journey. It is more likely their wellness journey will be successful if they start now, rather than wait until they are older.

3.3 Middle Age

The Oxford English dictionary defines middle age as "the period of life between young adulthood and old age — usually regarded as between 45~64." From a physical perspective, This is the life stage where certain diseases start to show up, including cancer, diabetes, and high blood pressure. From a family life perspective, individuals in this life stage may still have children at home so they are juggling work, family, and personal time, and feel constantly busy and on the run. Or, one might be entering the empty nest stage and dealing with separation from children. That also means that struggles to pay college tuition for one or more children exist. Aging parents can be another factor in this life stage as are the stressors of taking care of them physically and/or financially. An individual in this life stage may be under a lot of work pressure and struggling to secure the next promotion. Questioning

one's choice of career, feeling dissatisfied with work and wanting to do something different are not uncommon experiences. But family financial responsibilities might prevent individuals in this life stage to risk making a change. One might even be questioning the meaning of life. There are also some high-impact events that can occur at this stage, including serious illness or death of a spouse, the illness or death of a parent, or job loss. This tends to be the most stressful period of life for most people and the most fatiguing as well; physically, emotionally, and cognitively. In a 2011 study of 72 countries, the majority of respondents reported being at their most unhappy in their 40s and early 50s^[22]. Another study reported that enjoyment and happiness dip in middle age, sadness picks up slightly in middle age, and worry peaks in middle age^[23]. But there are some benefits to middle age. Data suggests that people are less likely to die in their 50s and 60s than at any other time in their lives^[24]. In the workplace—offices, construction sites, sports fields, and educational settings— it is usually middle age people that are in positions of power. Individuals tend to be more comfortable with themselves at this stage and less worried about what others think. Also, people in this life stage may have a little more flexibility in their finances and are able to make purchases they could not afford when they were younger.

Middle age can be a powerful time in life for many people, so long as they can keep focused on their wellness needs in the face of a tremendous amount of fatiguing and disruptive stress. In terms of wellness, the three main concerns in middle age seem to be increased stress, increased fatigue, and decreased happiness. Fortunately, nature can be used to counteract all of these issues.

Everyone knows what it is like to feel tired or unhappy and habitual fatigue and unhappiness can affect one's physical health, mental health, and wellness. There are many middle age people who are not battling

a particular disease like diabetes, heart disease, or cancer. They are not struggling with Parkinson's Disease, bi-polar disorder, or a physical disability. They feel fortunate to not have a particular illness or diagnosis that they must overcome or learn to live with, but they also are not at the stage of wellness that they would like to be. They would like to feel stronger, more resilient, and full of vitality. Stress — the invisible disease that most people face every day — at work and at home. In 2006 the World Health Organization identified stress as a growing global concern and a risk factor for developing illnesses including heart disease, type II diabetes, and depression, as well as being a major cause of premature death. According to the research, stress affects the body's organs in many different ways and if this stress is present for long periods without opportunity for relief, the body's organs react in harmful ways. Stress can lead to mental fatigue as well, followed by a decline in the ability to think, learn, and socialize^[25]. In other words, if people are not able to find relief from their stress, the result can be significant, negative impacts on health. A survey in Canada revealed that more than 70% of Canadian adults report excessive stress levels. This condition creates serious impacts on the health care system and economy. Canadian employers lose an estimated \$20 billion per year due to stress-related illnesses, which are the number one reason for sick leave.

There is growing interest in treating stress with nature-based therapies and there is increasing evidence that exposure to nature can reduce stress^[26]. An intervention program in Alnarp, Sweden has put that evidence to use in treatment for stress-related illness, which is a medically recognized diagnosis in that country. In one study there, those participating in Alnarp's nature-based rehabilitation showed significant changes in symptoms of severe stress and an increase in return to work^[27]. Many participants reported an intentional use of nature for mental recovery and to

slow their pace down^[28].

Another qualitative study at Alnarp illustrated that the rich and varied components of the garden were especially helpful in times of stress. Not only was the garden itself a good environment for acute stress relief but also a useful laboratory for trying out strategies to improve daily functioning and increase wellness^[29]. In the United States, many people have to rely on a pill, or several, to help manage their health concerns. Most people have access to a powerful stress buster— nature and the green spaces in their communities. But like any medicine, if people do not take it, they do not get the benefits^[30]. So people have to get out into nature to benefit from it. If more people were willing to offer gardening gloves or trainers as a prescription for stress relief, maybe our social health would get into a better virtuous circle. Companies can encourage employees to take green breaks and reimburse employees for expenses such as membership in public gardens, which would be smart investments in employee well-being.

What are some ways middle age people can increase the amount of nature in their lives at this stage in the journey toward increased wellness? People in this life stage are very busy, overcommitted, often overwhelmed, and physically and emotionally exhausted. Starting small is a good method; be clear about goals, write them down, and then follow through. During the workday, take a break outside under a tree rather than inside. Host a walking meeting instead of sitting around a conference table. During the lunch hour, put away smartphones and look for wildlife, interesting plants, or nature views in city parks or other greenspaces. People living in urban environments may need to search out micro-experiences in nature; places like city parks, pocket parks, green corridors, green interiors, and atriums.

3.4 Late Adulthood

The last life stage to be explored is late

adulthood. Late adulthood is generally thought of as beginning at age 65 and continuing until the end of life. This life stage often coincides with retirement. There are significant challenges for many in the late adulthood life stage. Physical challenges often include a decrease in muscle and bone strength and an increase in stiff and painful joints. Eyesight and hearing decline, and there is also decreased sensitivity in all of the senses. Cognitive and physical response times slow down and the working memory decreases.

Depression is recognized as the most frequent mental problem in older adulthood and it can especially be problematic for older adults who have fewer social connections and more isolation. Serani^[31] reported that 15% of older adults suffer from major depression and 25% from subclinical depression. Because the process of aging is often linked with the gradual loss of social roles, especially in the United States, social connection is especially important for older adults. Strong social ties with neighbors may help to provide older adults with new social roles, which can positively affect their sense of well-being.

The three major concerns at this life stage are decreased physical function, decreased social roles, and increased or developing depression. One of the theories of successful aging is the activity theory^[32]. That argues that one must be active to maintain a quality life. A study in rural Japan looked at how often older adults went outdoors^[33]. Researchers found that those who went out more frequently showed the greatest improvement in function and intellectual activity, even when controlling for baseline differences. Those older adults also showed the greatest improvement in self-efficacy in daily activities and health promotion. The scores of those who seldom went outdoors decreased rapidly. Research also reveals physical benefits for older adults going outdoors. A large scale study in the United States found that older women who regularly walk a longer distance are less

likely to develop cognitive decline during the next 6~8 years versus those who walk only a short distance^[34]. A nine years study of older adults in Sweden found that those who increased activity participation tended to perceive their life condition as better^[35]. Older adults in a retirement community who routinely spent more than 30 mins in outdoor physical activities were less likely to report depressive symptoms and fear of falling^[36]. D'Andrea et al.^[38] found that gardening encouraged activity participation and improved affect for those with dementia. A study found that those older adults who participated in a 7-week horticulture program showed a significant increase in psychological well-being over those that did not participate^[37]. A study in the Netherlands showed that the amount of neighborhood greenspace is positively associated with health status of older adults^[27]. The amount of greenness of nearby open space was associated with its frequency of use by older adults, fostering stronger social connections among them^[38].

What are some ways to engage older adults with nature? Providing safe access to the outdoors is essential, as is increasing the quality of nearby outdoor areas helps to alleviate fears of going outdoors. Opportunities to join activity groups can help older adults engage with nature: a bird watching group, for example, or a horticulture or outdoor craft group. Outdoor teas are a good social opportunity and may also provide a sense of familiarity for those with dementia. More and more older adults are participating in yoga classes, tai chi, and water aerobics, and when the classes are held outdoor they are further increasing opportunities for wellness^[22]. Community gardens are a great outdoor environment for older adults because they provide a place to grow food and flowers, to exercise, and to gather and socialize with new and old friends. Outdoor walking is another great activity for older adults. The study reported that walking and reflecting in the context of beautiful nature provided

a sense of peace that helped to lift the feelings of depression.

4 Conclusion

Interaction with nature is good for humans whether or not they have a particular illness or disability. No matter the life stage, nature is an essential partner as one navigates his or her life course. As revealed through this chapter, nature supports creativity, cooperation, and problem solving, and enhances focus and cognitive skills. It helps to increase intrinsic attitudes, caring behavior, generosity, and psychological health. Nature alleviates fatigue and stress, and increases vitality, happiness, peacefulness, and social connection. While this chapter has linked specific benefits to specific stages of the life course, they no doubt overlap and are beneficial at every stage.

Being in nature provides a space in which everything is free to be felt and expressed without judgment. Nature can handle one's emotions, pain, and weaknesses. Nature is receptive to one's presence and allows space that is not found in daily life. The pure and diverse beauty of nature generates a reverence and appreciation for life and for one's surroundings. Nature doesn't command; it just is, allowing one to just be. And in that way, nature is an essential partner in the journey to wellness. 