健康人群能否从健康类移动终端应用程序获益?

Can healthy people benefit from health apps?

健康人群能否从健康类移动终端应用程序(APP)获益?对于这一问题,本文的两位作者给出了截然相反的回答。

Iltifat Husain 写道:一些 APP 有潜力激励用户养成更健康的生活习惯,并且可以为大多数人所用。但英国格拉斯哥全科医生 Des Spence 提出,健康 APP 的效果目前还缺乏有效证据,而这类 APP 有可能会增加用户不必要的焦虑。

Iltifat Husain
editor, iMedical Apps. com, and assistant professor of emergency medicine,
Wake Forest School of Medicine, North Carolina, USA,
Des Spence
general practitioner,
Glasgow, UK

戴 廉 译
华康移动医疗

正方 —— Iltifat Husain

健康类 APP 是一种在智能手机上为用户提供健康服务的手机软件。许多此类 APP 针对的是有明确疾病诊断的患者,比如教哮喘患者如何正确使用呼吸器或通过无线同步血压计正确测量血压。但也有许多 APP 是针对没有患病的人群,例如跟踪用户的热量摄入和运动情况,甚至他们的睡眠模式。

APP 有益健康

患者在初级诊疗门诊就诊时,会与医生讨论减肥和健身的问题,但大量的证据表明,他们仅会保留医生的很小部分教育建议[1]。相反,初级保健人员可以推荐健康类 APP 来为患者提供健康教育和行为改变的技巧。我们已经知道,在过去几年里,LOST IT 这款以制定减肥计划为基础的 APP 相当流行,其效果与在纸上或者网上的减肥计划相当,甚至更好[2]。直觉告诉我们,这是因为人们往往会随身携带智能手机,并且它比纸上的计划更易追踪到体重减轻和卡路里摄入的情况。

此外,多年来我们已经知道,基于移动终端的减重方案效果很好。最近的两个随机试验表明,通过在个人数字助理(PDA)上添加合适的移动应用程序策略,可以增加依从性,并比传统方案得到更好的效果。在一项研究中,移动组平均比标准组多减重 3.9 kg,各基线水平均高于标准组(95%可信区间 2.2 ~ 5.5 kg)[3,4]。而智能手机上的 APP 效果更优于 PDA,因为基于智能手机的 APP 能与患者的生活方式更深层地结合在一起:由于 PDA 不能连接 Wi-Fi,也不能拨打电话,而智能手机都能做到,并且能做得更多,从而实现了与 PDA 相比更贴心、更频繁的使用体验。

关于智能手机中某个特定 APP 的数据非常少,因为尽管这对于公众来说并不是什么新鲜事,但对于研究者来说还是新生事物。关于 PDA 上减肥软件的试验结果发表于 2013 年,比 PDA 鼎盛时期滞后至少 10 年。

研究人员测试了当前流行的健身设备,如 Fitbit 和 Jawbone。这是通过运动传感器记录用户步数和整体运动的可穿戴设备,数据可通过 APP 同步到智能手机。有几个研究已经证实了它们的准确性[5]。目前没有任何证据表明,这些健身设备能改进结果或使锻炼符合标准,但也同样没有证据表明,它们会造成什么伤害。

5 年前，健康类 APP 只能被那些持有智能手机的有钱人使用。如今，美国有近三分之二的成年人拥有智能手机，并且，根据皮尤研究中心的研究结果，较穷的成年人比富有的成年人更多地通过手机访问互联网或收发电子邮件[2-6]。

智能手机和 APP 现在被大多数人所接触，可能会对健康产生广泛的影响，并且没有年龄限制。其实，目前大多数使用健身可穿戴设备如 Fitbit 和 Jawbone 的人，年龄大于 35 岁[7]。

健康类 APP 和可穿戴设备可以为患者提供诊断、提高满意度和依从性，因此，它们或许也能帮助健康人保持健康状态。

没有证据表明 APP 有害健康

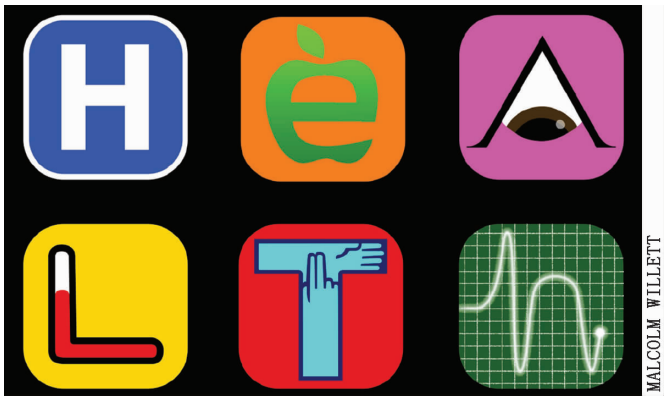
目前，没有证据表明健康类 APP 促进体能活动或改善饮食会导致有害结果，这些缺乏的证据也不是必要的证据。我们已经可以看到，大量的 APP 和设备可以监测心率、皮肤温度、出汗量和许多其他指标。

但是，移动技术使我们能跟踪到这些指标并不意味着我们应该跟踪这些指标[8]。许多这样的 APP 尚未经过检验或验证，或者，他们提供的医疗意见并不符合要求。例如，儿科学会并未建议使用移动婴儿监视器来防止婴儿猝死综合征，但行业内仍在生产并销售这类 APP。

我们不能依赖于苹果或谷歌来监管其应用市场内的 APP，或引导用户离开毫无循证医学证据甚至可能有害的应用。现在，应用市场内有数以万计的健康类 APP，美国食品及药品监督管理局（FDA）2 月发布了最终的指南，称其只能监管连接智能手机的医疗设备或其辅助程序[9]，对于即使出错也不会对用户健康造成威胁的 APP，FDA 并不会进行监管。这些 APP 中包括数据处理类 APP，用户可以通过这些 APP 追踪其健康指标，也包括让用户自我管理病情，但并不提供治疗建议。所以目前有成千上万的健康类 APP 是不受监管的。

结论

反对者认为健康人群不应使用健康类 APP，因目前并无充足证据表明人们能从中获益，此外，它还会引起不必要的焦虑，因为这意味着增加了初级保健人员的工作量。但 APP 已经在 PDA 上存在了超过 10 年，并且已被证实能够带来健康益处。



智能手机上的 APP 已经扎下根来，其中一些通过鼓励健康的生活方式，降低发病率和死亡率。此外，其低成本及可用性意味着能够使大量的人群获益。如果我们还在等待科学研究证明其获益，我们不仅会被患者抛弃，还会被新兴行业抛弃。

苹果和谷歌不会将有害的 APP 踢出应用市场，FDA 显然也无法顾及到成千上万的健康类 APP。如果我们回避解释相关指标的重要性以及理由，那么这些 APP 的确会带来很大的危害。

总之，健康人群的确能够从健康类 APP 中受益匪浅，这些 APP 鼓励人们多运动及控制饮食，但医生应该告诉公众，何种指标重要，哪些 APP 应该购买。

反方 —— Des Spence

医学科技日益丰富：视网膜植入物、人工电子耳蜗、机器假肢，甚至植入式胰腺……，谷歌正在开发一种高级隐形眼镜，能够连续监控血糖浓度[10]。对这些现代医学奇迹，用再多盛赞之词也难以描述。

但另一波科技浪潮又在掀起：智能手机和平板电脑中的医疗 APP。这些 APP 可能会改善用户心理健康、帮助睡眠、控制体重、控制食物过敏、帮助自我诊断、管理疼痛，并在其他医疗场景中让人受益。这其中，有些 APP 已经受到了英国国家健康体系（NHS）的支持[11]。

大多数有害（或者无用）

这些数以万计的 APP 可能大多数是无害的（很可能也是无用的）。但是，最近这些 APP 正在变得不同于往日。当与可穿戴设备一起使用时，APP 提供连续的生理监测，例如妊娠期胎心监测[12]、血压监测、心率监测，甚至血氧饱和度监测[13]。不远的将

来,这些可穿戴设备和 APP 会无处不在。这会是疾病监测和早期诊断的医疗革命吗?

我们需要考虑,谁将会使用这些新的设备。今天,简单的财富已成为过去,健康和健身已经成为新的社交货币,孕育出“健康焦虑症”的一代。健康“珍宝”无处不在:莱卡遍布、来自异国慈善机构半程马拉松的 T 恤、喋喋不休的私人教练及培训项目、比汽车还昂贵的自行车。食物也不再是享受,而成为一批混杂着豆类、绿叶及坚果的“药典”。相较于早前酗酒、吸烟及吃咸牛肉的一代,目前的状况已经得到很好的改善。但现在这个科技进步的社会总是在逃避、恐惧、不安,对于任何事都保持着担忧的态度。这一代人对健康近乎病态地着迷,紧抓着新的 APP 和设备不肯放手。

大部分医学研究和诊断是基于医生对诊所里年长、高危、有症状患者的独立数据进行解读,而不是基于对一帮神经兮兮、无明显临床症状的宅男宅女持续监测生命体征(甚至在他们睡觉的时候)而得到的数据进行研究。

那么,这些 APP 的用户到底可以发现些什么呢?短暂的心律失常在正常人群中有多常见?什么时候我们的血压高出正常范围?正常的血氧饱和度参考范围有多大?子宫内胎儿的心率与成人有什么不同?

如果这些智能监测的玩意儿失常或被放到不正确的位置,会发生什么事情?这种“患者自测”会改变我们的诊疗模式吗?谁又能对这些数据进行分析?如果说父母想对孩子进行这类健康监测呢?有什么证据能表明这些结果能改善诊断过程?

诊断充满不确定性,催生焦虑

事实上,这些 APP 和智能手环等设备是未经检测的,很不科学。它们打开了一扇充满不确定性的大门。毫无疑问,诊断的不确定性会增加人们的焦虑感[14]。我们要认真反思使用这些 APP 或智能设备会失去什么,而不是想会得到什么。有没有可能这些 APP 纯粹会让患者过度诊断和瞎操心?

我们想想,到底谁能真正从这次健康极权主义和没事找事的医疗微管理中受益?医药类企业和药厂,对,就是他们。他们联合的商业动机把我们变得对自己的身体紧张过度。我们就这样看着不理智的复方用药、假筛查和一些本没有病的患者呈指数增长。

很遗憾的是,人们的守护者——医生们——要么与这些事情有金钱上的利益冲突,要么看不清其中的弊端。

目前的科技已经被医生滥用或过度使用以逐利:做 CT、MRI、血液检测等等。这些结果带来了医疗损害和过度诊断[15]。因此,当我们想接受更多新的医疗技术的时候,我们需要抱以怀疑态度,思考到底需不需要它。

人类的身体只是部“简单的机器”

同样地,社会上越来越多的人觉得身体纯粹就是一部机器:没病,你就听听医生的建议,病了,你就吃药,有空就去体检;然后,现在,就是用这些新兴的 APP 来持续监控这些“机器”。

做到上述这些,我们就不会得癌症,不会得痴呆症,不会得心脏病,诸如此类。虽然大家没说出口,但心里都有一种对疾病的看法,即世界上分两种病,一种是你“活该得”的,比如糖尿病、肺癌、心脏病或慢性阻塞性肺疾病等;还有一种“不应得”的疾病,比如乳腺癌、白血病等。简化论者的想法是:死亡和得病像“中彩票”一样,是在我们控制范围之外的。所以当得了“不应得”的病时,人们觉得被背叛了。这些智能手环、这些监测技术只会让这种愤怒升温(“我明明那么注重自己的身体,时刻监测自己的生命体征,为什么还是得病了?!”)。

FDA 和英国医疗产品管理机构决定对这类健康 APP 和智能设备进行柔性监管[16,17](light touch,又称轻干涉——译者注)。健康 APP 和智能设备野蛮拓展的方法已经结束,他们开始用经典的广告手段——人们的恐惧——来推销产品。战争、瘟疫和饥荒都不是个事儿;新技术、过度用药和过度诊断才是现代的世界末日。人类正花大量的时间来监控自己的生活,而不是认真面对眼前的事情,活在当下。可穿戴设备和医疗 APP?不需要,谢谢;我要看看,不用会怎么样。

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评论

健康类 APP,个人医疗时代的开端?

戴廉
华康移动医疗

你有手环吗?有!每天用各类可穿戴式健康类 APP 设备记录身体数据的健康人越来越多了。大量健康类 APP 的背后究竟是一种自我健康管理行为,还是一场时髦的运动?

促使"量化自我"这一现象流行的原因,一方面是技术的进步,无线互联网、无线传感器、智能终端等现代高科技发展使得越来越多的生命体征可以被测量;另一方面则离不开社交媒体的发达。回想一下,在你的社交媒体圈中,分享运动数据、运动照片、运动计划的人是否越来越多?可以说,正是分享、点赞等一系列网络社交行为不断给予"量化自我者"各种正向激励,促使越来越多的人参与其中。不断改进自我、追求健康这一过程成了一种时尚。

同时,我们也看到,大量沉迷于"量化自我"的人中也有些似乎患上了"过犹不及"的健康焦虑症。他们可能会因为数据图表表现出即将患上疾病的杂音征兆而焦虑不堪;也可能因为减肥 APP 的提示而一天数次站到体重秤上……,总有一些人会沉迷其中。从这个意义上,我们可以说,目前大量使用健康类 APP 测量自我数据的行为,其中时髦的成分的确要多过其对健康的促进。大量的移动医疗产品,与其叫"医疗产品",莫过于被称作"健康消费品"。

但是,情况会一直如此吗?

1991 年,Geoffrey Moore 提出了一个创新曲线理论。按照应用一项新技术的先后顺序,他把参与者分为"创新者"、"早期尝试者"、"早期大量使用者"、"晚期大量使用者"以及"拖后腿者"。如果用这个理论来分析,我们会发现,在很多新技术的应用曲线上,医学界整体上很难成为早期使用者。这与医学这个学科的文化有关。医学与生命相关,需要极严谨和审慎,"无害"、"安全"是医生接受的第一堂课的主旨。也正因此,

移动健康可穿戴设备所摄取的数字至今还难以在真正的医疗领域进行大规模使用。不过,这并不意味着它们以后也不可以。

事实上,可穿戴式设备、健康 APP 以及“量化自我运动”的兴起给未来的个人健康管理甚至医疗服务提供了一种可能性:即医疗将从专业权威的指导更多走向消费者的自主参与,从基于医疗工作者的经验判断走向基于大数据的准确预测。

一旦越来越多的专业数据可以让消费者在个人终端轻松获得,海量的数据搜集将不再是问题,基于大数据分析得出的对疾病的判断和预测,也将在很大程度上改变当前的健康管理和医疗行为。而个体在健康管理和诊疗过程中,将不再是以往被动的接受者身份,他们将更具主动性,更有参与感,更有能力为自己的健康负责。

今天的健康 APP 仍显稚嫩,但它或许预示着未来医疗的开端,预示着一个崭新的个人医疗时代将呼之欲出。

(收稿日期:2015-07-13)

观察与视点
Views & reviews

It doesn't "come with the job": violence against doctors at work must stop

A drunken patient had fallen over and lost consciousness from head trauma. As he awoke I was met with indignation and racial slurs. Investigation indicated no injury to treat, and the man agreed to a few hours' observation. But I returned later to find him verbally abusing the nursing staff, and he made physical threats on seeing me.

Despite our best intentions this man felt let down by the system, and the standard of our care fell short of his expectations. Demanding a form to discharge himself, he stormed out of the department. When I went into the waiting room to call the next patient the same man physically assaulted me, throwing me to the floor and punching me.

Which incidents do we report?

Patients in the emergency department who are in pain may behave uncharacteristically badly, and health workers have particular difficulty deciding which incidents of abuse to report, if any.

A good definition of workplace violence in healthcare settings might be: "Behaviour by an individual or individuals within or outside an organisation that is intended to physically or psychologically harm a worker or workers and occurs in a work related context."[1] This covers physical assault, such as spitting, and non-physical assault, such as verbal abuse and threats.

Doctors and nurses worldwide experience high levels of such aggression[2,3]. Most Spanish healthcare workers reported having experienced insults at work, and similar levels have been reported in Ireland and the United States[4,5].

In the latest NHS survey of more than 600 000 staff who responded, 28% reported bullying, harassment, or abuse from patients or relatives, of which 15% (68 683) identified the abuse as physical. Almost half of the staff who had experienced workplace aggression said that they had not reported it[6].

Staff in psychiatric departments, emergency departments, and general practice are most at risk. Of the 68 683 assaults against NHS staff in 2013-14, 47 184 (69%) took place in mental healthcare settings, and the rest were in acute, ambulance, or primary care settings[2,3,6].

Health workers may perceive that violence from patients stems from mental illness or from the influence of drugs, including alcohol[7]. Other factors associated with workplace violence that are particularly relevant to emergency departments include long waiting times, stress, anxiety, and impatience[7]. Workload pressures and inadequate staffing increase the risk of workplace violence[2,6,7].

The NHS has a "zero tolerance" policy towards such violence, introduced in 1999. In 2013-14, the 68 683 reported assaults led to 1 649 (2.4%) successful prosecutions[2,6]. But the results of the NHS staff survey may represent only the tip of the iceberg[6,7]; a common reason given for under-reporting is a perception that violence from patients is something that comes

with the job.[7]

The consequences of workplace violence for victims are multiple and go beyond the physical and mental injury inflicted: they can include ongoing anger and anxiety, substance misuse, and psychological burn-out[8-10]. These are associated with loss of working days, poor staff performance, increased stress, erosion of morale, and reduced trust between staff and management[6,7], emphasising a need for aftercare.

The NHS has proposed several initiatives to reduce violence against healthcare workers. For example, better staffing levels reduce waiting times; the layout of clinics should allow for the expulsion of aggressive patients or relatives; and waiting areas should be as comfortable as possible, with regular updates of waiting times[6]. Also, healthcare providers should install panic buttons, security cameras, and security staff.

Medical education should include lessons on how to deal with aggression and violence among patients[11]. Learning about conflict resolution and self defence should be mandatory for all healthcare workers. Perhaps most importantly, staff should know that they have the support of their trusts and that assailants will face appropriate consequences, including prosecution[7].

A protective barrier

After I was attacked but before the security staff and police arrived, other vulnerable patients in the waiting room held my assailant against the wall to protect me. More patients stood in front of me as a protective barrier. Several times my attacker broke free and launched himself at me but was again restrained by the patients, who were themselves unwell. They were hit and spat on, but they didn't let a single blow land on me again.

The police were called, and my assailant was successfully prosecuted and jailed. He was also barred from entering the hospital grounds after it emerged that he had an ongoing history of frivolous emergency department visits while drunk. Although I didn't make use of it, the BMA has a dedicated service that offers the opportunity to speak to a fellow doctor in confidence.

However difficult the profession of medicine becomes, and whatever challenges and obstacles our NHS faces, I am no longer disillusioned or burdened by these pressures. Workplace violence in healthcare settings can never be eliminated—but all healthcare workers deserve respect and the chance to work in a safe and civilised environment.

Sukhpreet Singh Dubb, *CT2 doctor*, Department of Investigative Medicine and Academic Surgery, Imperial College London, UK
ssd05@ic.ac.uk

Sukhpreet Singh Dubb reflects on the ubiquity of aggression towards healthcare workers after he was attacked by a patient in the emergency department

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