·综述·

脑卒中患者跌倒恐惧干预方法研究进展

陈园园[1,2],宋咪[1],张华果[3],皮红英[4*]

([1]解放军医学院,北京 100853;中国人民解放军总医院:[2]第二医学中心心血管内科,[4]卫勤训练中心,北京 100853;[3]首都医科大学附属北京世纪坛医院护理部,北京 100038)

【摘 要】 跌倒恐惧(FOF)在脑卒中患者中普遍存在,可导致患者回避行为,带来跌倒风险进一步增高,形成恶性循环。与健康老年人综合性干预方式不同,脑卒中患者FOF干预以改善特定功能和提高患者康复信心为目标。本研究基于近几年国外相关研究,总结分析不同措施的特点及效果,以帮助医护人员优化干预措施,改善脑卒中患者FOF恶性循环。

【关键词】 脑卒中;跌倒恐惧;行走;认知行为干预

【中图分类号】 R743.3 【文献标志码】 A 【DOI】 10.11915/j.issn.1671-5403.2023.02.027

Research progress in intervention measures for fear of falling among stroke survivors

Chen Yuanyuan[1,2], Song Mi[1], Zhang Huaguo[3], Pi Hongying[4*]

([1]Chinese PLA Medical School, Chinese PLA General Hospital, Beijing 100853, China; [2]Department of Cardiology, Second Medical Center, [4]Medical Service Training Center, Chinese PLA General Hospital, Beijing 100853, China; [3]Department of Nursing, Beijing Shijitan Hospital, Beijing 100038, China)

【Abstract】 Fear of falling is quite common among stroke survivors, which can lead to avoidance behavior and then further increases fall risk, forming a vicious circle finally. Different from the inclusive interventions targeted to healthy older people, interventions for stroke survivors intend to improve certain functions and balance confidence. In this review, we summarized the characteristics and effectiveness of different interventions based on concerning foreign studies in recent years in order to help medical staff to optimize the measures and then break the vicious circle of fear of falling in stroke patients.

【Key words】 stroke; fear of falling; walking; cognitive behavior therapy

This work was supported by the National Key Research and Development Program (2018YFC2001400).

Corresponding author: Pi Hongying, E-mail: pihongying@301hospital.com.cn

跌倒恐惧(fear of falling,FOF)指对跌倒的持续过度关注,个体为规避跌倒而导致在进行某项有能力参与的活动时降低信心的现象[1]。FOF会导致各种负面的健康结果,如平衡能力降低、日常生活活动能力下降、社会参与受限,这些负面结果会使跌倒风险进一步增高,从而形成恶性循环[2]。脑卒中患者住院期间FOF的发生率为54%[3];出院后脑卒中患者FOF发生率为32%~66%[4],由于患者肢体功能障碍,平衡功能受损,FOF发生率远远高于正常老年人。通过对老年人跌倒的研究发现,与平衡等其他指标比较,心理因素是预测跌倒更有价值的指标,FOF和回避行为是独立预测未来跌倒的最佳指标[5]。健康老年人FOF干预强调多种方式结合,具有复杂和全面性,而脑卒中患者FOF干预强调针对性和可操作性,中风康复指南指出卒中患者的康复应以“特定活动”和“功能性任务练习”为主,改善患者活动能力[6];目前尚缺乏有关脑卒中患者FOF干预措施的研究综述,本研究旨在总结近年国外脑卒中患者FOF干预措施,并分析不同措施的特点及效果,为卒中患者FOF干预提供参考。

卒中导致患者麻痹和肌肉无力,带来平衡、行走功能障碍和FOF,解决患者行走及活动功能障碍将有效缓解患者的FOF[7]。基于卒中康复指南的要求,干预方法设计应简单,符合患者日常生活需求,并在康复过程中逐渐增加运动难度和挑战性,维持足够强度、频率和时间[6]。通过对近年国外已发表相关文献总结,将干预方法分为运动干预、心理认知干预、心理认知与运动干预结合。

收稿日期:2022-02-10;**接受日期**:2022-05-06

基金项目:国家重点研发计划(2018YFC2001400)

通信作者:皮红英,E-mail:pihongying@301hospital.com.cn

1 运动干预

1.1 特定任务训练

特定任务训练(task-oriented balance training, TOBT)是卒中患者康复的重要内容,该训练强调运动任务的重复练习,具有明确的目标导向,原则上强调学习任何能力的最佳方法是练习该特定能力,通过开发大脑的备用区域来恢复运动功能,该训练在行为(感觉或运动功能的恢复)、生理(运动诱发电位的增强)和结构/神经解剖学(轴突或树突连接的重新建立)[8]等多个层面诱导神经可塑性变化;患者通过执行特定任务获得成功经验,从而提高自我效能感,降低 FOF[9,10]。Sheikh 基于 TOBT 理念设计了穿鞋训练,在慢性脑卒中患者中进行 6 个月的干预研究,在训练后及训练结束 3 个月后特定活动平衡信心量表(activity-specific balance confidence, ABC)得分显著提高,效果优于平衡训练组[11]。

1.1.1 基于扰动的平衡训练 基于扰动的平衡训练(perturbation-based balance training, PBBT)是 TOBT 的一种,旨在安全可控的环境中改善患者失去平衡后的反应性控制能力[12],模拟现实生活中意外跌倒情况。Handelzalts 等[13]将 PBBT 应用于脑卒中亚急性期患者,发现与对照组(步态和重心训练组)相比,PBBT 组短期训练后的 FOF 显著改善(效应量为 0.74,ABC 测量)。

1.1.2 步行训练 步行训练是 TOBT 训练的一种,也是近年卒中 FOF 的研究热点,步行能力是脑卒中后偏瘫患者功能康复的主要目标,也是患者重新融入社区生活的主要途径[14]。据报道,只有 60%~80%的中风患者可以独立行走。步行训练主要包括仪器设备辅助训练及地面训练,两者各有优势。机器人辅助步态训练(robot-assisted gait training, RAGT)可提供体质量支撑,通过外骨骼装置控制下肢,改善对称性和协调性[15],并通过感官反馈纠正错误步态。Bang 等[16]进行了为期 4 周的 RAGT 训练,与普通跑步机步态训练相比,RAGT 组的 FOF(ABC 测量)得分在干预后显著提高;Mayr 等[17]指出,提高患者步行能力需要减少体质量支撑、加快步行速度、减少患侧下肢的错误引导,RAGT 包含了这些因素,从而更好的改善了患者的步行能力与 FOF 水平;Graham 等[18]比较了不同难易程度的跑步机训练对于脑卒中亚急性和慢性患者的康复效果,结果发现高难度任务对患者 FOF(ABC 测量)和步行能力无明显效果,而低难度任务组在干预前后有统计学差异。这说明低难度任务,如不提供扶手支撑,对患者来说即是一种足够的强度的刺激,可带来步行能力和信心的改善。无法在户外独立行走是导致居家患者 FOF 的主要原因,户外环境需要将步行与多种任务相结合,提高了步行难度;Park 等[19]给予脑卒中患者超市、医院、马路、楼梯、停车场等不同户外场景的步行训练,与普通康复方案的对照组比较,社区步行训练组 FOF 得分(ABC 测量)干预后显著提高。

近年研究比较了多种形式的步行训练对 FOF 的干预效果,Rose 等[20]比较了向后行走训练与站立平衡训练对卒中患者的康复效果差异,结果发现,向后行走训练对 FOF 改善更明显,但在干预后 3 个月效果明显降低。Park 等[21]通过播放在不同障碍路面行走的录像,给予脑卒中患者步行观察训练,发现干预后 FOF 明显改善。患者通过观察训练获得步行的间接经验,从而应对不断变化的地形和障碍。可见运动干预对患者的影响不仅是运动本身,运动使患者不断挑战自己,获得经验,运动过程中干预者给予积极反馈,给患者带来信心,带来 FOF 的明显改善。

TOBT 和步行训练简单易行,从患者疾病特点出发,以改善特定能力为目标,可有效提高患者康复信心,但由于运动任务相对简单,对患者功能的改善也只涉及到步行等单一方面。在使用 Berg 平衡量表(Berg balance scale, BBS)测量平衡能力时,由于测试中不涉及步行活动,因而步行干预对平衡能力影响较小,相比之下,步行能力在用于测量 FOF 的 ABC 量表中占主导地位,因而目前研究显示出了步行能力和 FOF 之间的相关性。成功完成低难度级别的任务可以增强自我效能信念,使患者更有信心尝试更高难度的任务,因此,步行训练的渐进性对于干预效果有关键作用。

1.2 虚拟现实技术辅助干预

虚拟现实技术(virtual reality, VR)在神经系统慢性疾病康复中应用广泛[22],VR 可增强患者康复主动性和运动学习能力,通过模拟现实生活中的各种虚拟环境,变换不同任务场景,提供实时内在和外在多感官反馈[23]。Cano Porras 等[24]回顾性分析了在康复中心接受 VR 康复的脑卒中患者临床记录,发现 VR 训练可改善患者 FOF(ABC 测量)状况。对于亚急性的卒中患者,提高康复训练的效率是关键,在 VR 环境中进行 3D 平衡训练可提高患者躯干控制能力,相较于传统干预方法 FOF(ABC 测量)改善更明显[25]。将 VR 与其他干预方法结合可提高干预效果,Fishbein 等[26]将 VR 与双重任务训练相结合,应用于慢性脑卒中患者,干预后 FOF(ABC 测

量)明显改善并优于对照组,效应量值高达0.86,具有较大临床意义,双重任务增加了任务难度,从而提高干预效果。

VR训练基于运动学习和可塑性原则,是具有高强度、重复性并针对特定任务的训练[27];游戏过程提供了本体感觉、前庭、视觉和听觉等多感官反馈,结合感官与认知刺激,可提高患者的双重任务执行能力,游戏评分和治疗师监督还可激励患者不断进步[28];与传统训练相比,VR训练提供了更加刺激、丰富和愉快的环境,鼓励患者主动参与[29]。事实证明,模拟现实环境的VR训练比传统训练更有效[30]。然而,由于技术上的限制,VR不能完全模拟现实生活情况,影响患者康复的实际效果,但随着计算机科学的进步发展,短期内将可能创造更逼真、更有针对性的VR环境。

2 心理认知干预

认知行为疗法(cognitive behavior therapy,CBT)是一种心理治疗干预,旨在改变可能导致负面情绪和行为的不切实际的信念。脑卒中患者FOF是生理和心理两方面的结果,生理平衡能力受损和心理上对跌倒过度悲观的预期。CBT通过认知重构、促进身体活动并设定目标,可有效减少FOF、恐惧回避行为以及相关的不利后果,研究表明CBT可有效降低健康老年人FOF,短期保留效果(6个月)效应量为0.25,长期保留效果(12个月)效应量为0.37[31]。

3 心理认知与运动干预结合

Meta分析指出[32],心理认知与运动结合的干预比任何一种单独的干预方法更有利于改善脑卒中患者FOF;Chen等[33]在meta分析中发现,TOBT在干预后有显著的效应量(效应量为0.33,$P=0.02$),但随访后干预效果明显下降(效应量为0.01,$P=0.98$),说明单纯运动干预缺乏长期效果;Liu等[34]将CBT和TOBT结合,其干预效果持续到12个月后,并且与单纯TOBT组相比,FOF和恐惧回避行为的改善效果更好;这显示了CBT与TOBT具有协同效应。根据Bandura的说法,与FOF相关的自我效能感在慢性病管理中至关重要,它可以影响动机并调节行为,最终决定干预效果,运动疗法侧重于解决生理问题,患者从中获得掌握感,从而增强平衡自我效能感,但运动疗法不能替代其他自我效能感的改善方法,如口头说服、替代学习和应对策略学习,确定自我效能来源,有针对性地设定干预措施,可获得更好的干预效果。

4 结 语

各种干预方法对于脑卒中患者FOF改善各有优势,以TOBT为导向的运动干预可有效降低患者的FOF,但其长期效果有限。心理干预可改变患者的负面信念,虚拟现实技术可以大大提高干预的效果,多种干预方式结合可获得协同效应。同时,未来的干预研究应将FOF和恐惧回避行为作为共同干预结果,以更好的改善脑卒中患者FOF及其相关健康结局。

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(编辑: 温玲玲)