Advances in Psychology 心理学进展, 2016, 6(12), 1280-1288
Published Online December 2016 in Hans. http://www.hanspub.org/journal/ap
http://dx.doi.org/10.12677/ap.2016.612162

Hans汉斯

A Review of the Relationship between Pain and Psychology

Chao Ma[1,2], Junfeng Feng[1,2], Meng Zhang[3,4*]

[1]Faculty of Psychology, Southwest University, Chongqing
[2]Key Laboratory of Cognition and Personality (SWU), Ministry of Education, Chongqing
[3]Department of Psychology, Xinxiang Medical University, Xinxiang Henan
[4]University Key Laboratory Cultivation Base of Physiopsychology in Henan (XXMU), Xinxiang Henan
Email: machaoswu@163.com, *mengzhang.1985@163.com

Received: Nov. 30th, 2016; accepted: Dec. 20th, 2016; published: Dec. 23rd, 2016

Copyright © 2016 by authors and Hans Publishers Inc.
This work is licensed under the Creative Commons Attribution International License (CC BY).
http://creativecommons.org/licenses/by/4.0/

Open Access

Abstract

Pain is known as "the five vital signs", and it is very important for the survival and health of the individual. At the same time, chronic pain and other pain-related diseases are often difficult to cure. Patients suffer from pain for a long time causing a negative impact on individual and society. A deep understanding of pain can help us to understand pain and mitigate its negative effects. Pain, as a complex physiological phenomenon, has a close relationship with psychology. In order to help us to understand their relationship, we reviewed the relationship between pain and psychology in this paper, which may improve the effect of clinical treatment.

Keywords

Pain, Chronic Pain, Psychology

疼痛与心理关系的探究

马 超[1,2]，冯君凤[1,2]，张 猛[3,4*]

[1]西南大学心理学部，重庆
[2]教育部认知与人格重点实验室，重庆
[3]新乡医学院心理学系，河南 新乡
[4]生理心理学河南省高校重点实验室培育基地(新乡医学院)，河南 新乡

*通讯作者。

文章引用: 马超, 冯君凤, 张猛(2016). 疼痛与心理关系的探究. *心理学进展, 6(12),* 1280-1288.
http://dx.doi.org/10.12677/ap.2016.612162

Email: machaoswu@163.com, *mengzhang.1985@163.com

收稿日期：2016年11月30日；录用日期：2016年12月20日；发布日期：2016年12月23日

摘　要

疼痛被称为“五大生命体征”，对个体的生存和健康又十分重要的意义。与此同时，慢性疼痛等常见的疼痛相关疾病常常难以治愈，患者长期受到疼痛的折磨，给个体和社会造成了巨大的影响。对疼痛的深入了解有助于认识并减轻疼痛的负面影响。疼痛是一种复杂的生理现象，与心理有着密切的关系。本文通过对疼痛和心理之间的关系进行整理，有助于我们对二者的关系形成系统的认识，进而提高疼痛的临床治疗效果。

关键词

疼痛，慢性疼痛，心理

1. 引言

疼痛是一种普遍存在的生理现象，对个体的生存和健康有着十分重要的意义，与呼吸、脉搏、体温、血压并称为“五大生命体征”(Merboth & Barnason, 2000)。国际疼痛研究协会(IASP)将疼痛定义为“与组织损伤或潜在组织损伤相关的不愉快的主观感觉和情感体验”(Merskey & Bogduk, 1994)。疼痛是大脑对伤害性刺激或信号进行编码和加工的结果，使个体能够有效地避免和减轻伤害，是一种复杂的主观感受和情感体验，不仅会引起生理上的不适感，而且还会对个体的认知、情绪等心理方面产生消极影响(孟景，沈林，陈红，2011)。特别是近些年来，随着人们对疼痛的日益重视，越来越多的研究开始关注疼痛，不断的从生理科学、神经科学、心理科学等方面对疼痛展开研究工作，揭示疼痛的内在机制。慢性疼痛是疼痛在日常生活中最常见的表现形式，相关的临床研究为我们认识疼痛提供了一个非常重要的依据和手段。本文通过对疼痛与心理的关系进行全面的梳理，有助于增强我们对疼痛的认识，提高对疼痛的治疗效果。

2. 疼痛对个体心理的影响

疼痛是个体的一种复杂体验，包括个体的生理感觉和心理体验。生理感觉是指个体对疼痛刺激信息的编码和加工，如疼痛刺激的强度、位置等；心理体验是指疼痛引起的情绪情感等，如疼痛刺激所引发的焦虑、恐惧等负性情绪。疼痛刺激的信号从外周感受器传到大脑皮层的传导通路主要有两条：外侧通路和内侧通路。外侧通路的神经传导从脊髓和延髓背角出发，经丘脑的腹后外侧核投射到大脑皮层的初级感觉皮层和次级感觉皮层，被称为外侧疼痛系统，主要负责传递疼痛刺激的物理信息，与疼痛的感觉成分密切相关；内侧通路的神经传导是从脊髓和延髓背角出发，经过内侧丘脑／髓板内核群，下丘脑、杏仁核，到达前扣带回和脑岛，被称为内侧痛系统，主要负责传递疼痛的情绪反应和相关的记忆信息等，与疼痛的情绪情感成分密切相关(Almeida, Roizenblatt, & Tufik, 2004)。慢性疼痛病人长期遭受疼痛的折磨，疼痛对个体心理的影响在慢性疼痛病人的身上体现得比较明显。研究发现，长期的疼痛经历会对慢性疼痛病人的认知和情绪情感方面产生显著影响(Gatchel, Peng, Peters, Fuchs, & Turk, 2007)。

2.1. 疼痛对情绪情感的影响

疼痛往往会使个体产生大量的负性情绪反应(Gaskin, Greene, Robinson, & Geisser, 1992)。长期的疼痛

会引起个体的焦虑、抑郁、生气、自我关注和孤独等负面情绪，慢性疼痛往往会给个体造成巨大的精神困扰。

疼痛作为个体受到伤害的信号，会引起个体对自身健康的焦虑和担心情绪。临床研究发现，在慢性疼痛患者中存在非常高比例的焦虑症状(Campo et al., 2004; Wolfe et al., 1990)。Schellinck 等(2003)发现，小鼠早期的慢性疼痛经历会显著提高其焦虑水平，而焦虑水平则不会受到早期的急性疼痛经历影响。急性疼痛与慢性疼痛对焦虑水平的作用不同可能由于慢性疼痛持续时间较长，可能会导致大脑结构和功能的改变，从而影响到相应的心理功能。Banik 等(2010)的动物实验发现疼痛会引起焦虑，而当疼痛减轻时老鼠的焦虑水平也下降。

慢性疼痛病人的疼痛往往很难得到有效的治疗和缓解，长期的疼痛体验和对疼痛控制感的缺失会使个体的抑郁水平升高。Turk 等(1995)认为疼痛与抑郁之间的关系通过个体对疼痛影响的评估和个体对疼痛的控制感调节。Dersh 等(2006)发现疼痛与抑郁之间的关系可能比疼痛和焦虑的关系要更加密切，慢性致残性脊柱病人中 56%存在重度抑郁障碍，14%存在物质使用障碍和 11%的焦虑障碍。患者的抑郁水平会随疼痛程度的增加而增加，这说明疼痛可能是诱发个体抑郁的原因(Parmelee, Harralson, Smith, & Schumacher, 2007)。

愤怒也是慢性疼痛个体中非常显著的一种情绪。Schwartz 等(1991)发现慢性疼痛患者中普遍存在愤怒和敌对情绪。慢性疼痛患者的疼痛感觉反复出现并且不能够通过药物治疗有效地减轻，长期的疼痛折磨会使个体体验到强烈的挫折感，变得更容易愤怒(Fernandez & Turk, 1995; Okifuji, Turk, & Curran, 1999)。许多研究都发现愤怒和挫折感与疼痛感知之间存在很大程度的相关(Gaskin et al., 1992; Wade, Price, Hamer, Schwartz, & Hart, 1990)。

疼痛作为一种提示个体有伤害刺激的信号，往往会引起个体对疼痛的恐惧反应，即疼痛恐惧(fear of pain) (Asmundson, Norton, & Norton, 1999)。疼痛恐惧是指个体对疼痛刺激所产生的害怕和紧张的情绪反应，会使个体产生恐惧相关的行为，其原因是个体对疼痛的灾难化解释和把疼痛看作是伤害的不正确信念(Turk & Wilson, 2010)。疼痛恐惧可以通过个体自身的疼痛经历直接获得，也可以通间接经验如过观察学习和替代学习获得(吕振勇，纪晓蕾，黄丽，Jackson，陈红，2013)。

2.2. 疼痛对认知的影响

疼痛感知是个体对外界刺激进行认知－评估的过程，需要个体学习或提取已有的知识经验对当前的刺激或情景进行评估，并做出相应的反应(Moriarty, McGuire, & Finn, 2011)。许多研究表明疼痛会对慢性疼痛病人的注意、信息加工速度、学习记忆和执行功能等认知方面产生影响。

长期的疼痛会对慢性疼痛个体的注意功能造成损伤。慢性疼痛病人经常会报告自己出现注意困难的状况，并且慢性疼痛患者的注意功能，如注意转换和注意干扰任务等，会受到损伤(Alanoğlu et al., 2005; Bosma & Kessels, 2002; Buffington, Hanlon, & McKeown, 2005; Dick & Rashiq, 2007; Dick, Eccleston, & Crombez, 2002; Kewman, Vaishampayan, Zald, & Han, 1991; McCracken & Iverson, 2001)。慢性疼痛病人在加工面孔时更容易选择性地注意疼痛面孔(Khatibi, Dehghani, Sharpe, Asmundson, & Pouretemad, 2009)。疼痛对个体注意的损伤会影响个体信息加工的速度，疼痛会降低个体信息加工的速度，使个体在认知任务上的反应时增长(Antepohl, Kiviloog, Andersson, & Gerdle, 2003; Calandre, Bembibre, Arnedo, & Becerra, 2002; Harman & Ruyak, 2005; Lee et al., 2010)。

慢性疼痛不仅会影响个体的工作记忆，也会对长时记忆产生显著的影响(Luerding, Weigand, Bogdahn, & Schmidt-Wilcke, 2008; Park, Glass, Minear, & Crofford, 2001)。疼痛对记忆的影响可能与其对注意的影响相关(Oosterman, Derksen, van Wijck, Veldhuijzen, & Kessels, 2011)。Leavitt & Katz (2006)的研究发现，纤

维肌痛病人常常会抱怨记忆力的下降已经影响到他们的日常生活，并且认为记忆力的下降是可能是由于注意力分散引起的。Munoz & Esteve (2005)则认为慢性病人的记忆损伤与情绪障碍和灾难化思维等有密切关系。

慢性疼痛也会影响个体的执行功能。Grisart 和 Van der Linden (2001)的研究发现慢性疼痛患者在在记忆任务上的控制能力显著减弱。Karp 等(2006)发现疼痛程度越强个体在数字－字母转换任务的表现越差。Verdejo-Garcia 等(2009)的研究也发现肌纤维肌痛病人在执行功能任务上的表现比控制组要差。

3. 个体心理对疼痛的影响

疼痛会影响个体的心理状态，而心理也会对疼痛的感知产生一定的影响。情绪状态会影响到个体对疼痛的认识，并进一步影响到个体对疼痛的感知和应对方式，如当前心境状态会影响到个体的疼痛忍受能力(Turk & Monarch, 1996)。对疼痛刺激的评估和认知等因素也会影响个体对疼痛刺激的感知。安慰剂止痛效应就是应用了个体的预期、认知、情绪情感和动机等心理因素对疼痛感知的影响来调节个体对疼痛的感知(Price, Finniss, & Benedetti, 2008)。

3.1. 情绪对疼痛的影响

疼痛会引起个体的情绪反应，同时情绪也会影响个体的疼痛感知。研究发现观看不同情绪类型的图片对个体疼的痛知觉会产生不同的影响，负性图片会增强疼痛感知的强度，而正性的图片则会让个体对疼痛强度的感知降低(Meagher, Arnau, & Rhudy, 2001)。负性情绪较多的个体会经常抱怨自己的健康问题，并且对物理刺激的评价存在负性偏差，容易把躯体感受当作健康问题受到威胁的信号(Stegen, Van Diest, Van de Woestijne, & Van den Bergh, 2000)。

焦虑也会影响个体的疼痛感知，临床上疼痛相关的焦虑水平会影响慢性疼痛个体的疼痛水平和治疗效果(McCracken & Gross, 1998; Pavlin et al., 1998)。Gatchel et al. (2007)认为疼痛与焦虑水平的关系是双向的，二者互为因果、相互促进。Bement 等(2010)的研究发现个体对疼痛的知觉会随着个体的状态性焦虑水平的改变而改变。

疼痛和抑郁之间也是相互影响：疼痛产生的不愉快感促使个体回想以前的不愉快的体验，增加个体的抑郁水平；而抑郁水平的升高反过来加重个体的不愉快感，从而加重疼痛感觉(吕振勇等，2013)。Katon, Egan & Miller (1985)发现个体的抑郁情绪可以有效预测慢性疼痛的发生，超过一半的慢性疼痛病人会在疼痛发生之前出现抑郁症状。另一项慢性疼痛的纵向研究发现个体的抑郁水平和疼痛水平可以相互预测二者以后的发展(Chou, 2007)。

愤怒也会影响个体对疼痛刺激的感知。Kerns 等(1994)发现愤怒情绪的表达会影响到疼痛的强度、疼痛的干扰和疼痛行为的频率。Summers 等(1991)调查研究发现慢性疼痛病人的愤怒和敌对情绪可以有效的预测疼痛的严重程度。愤怒情绪能够加重疼痛强度可能是由于愤怒能够增强个体的生理唤醒(Burns, 1997)。愤怒也可以通过影响个体的抑郁水平来调节疼痛知觉，并且会阻碍个体对疼痛治疗的动机和接受程度(Gatchel et al., 2007)。

疼痛恐惧会使个体对疼痛的感知产生偏差，个体的恐惧水平越高，感觉到的疼痛强度越高，引起的不愉悦感也越强(Bailey, Carleton, Vlaeyen, & Asmundson, 2010; Kirwilliam & Derbyshire, 2008)。一般认为这是由于恐惧情绪对个体生理活动的调节，以及当个体在恐惧的时候对威胁信息选择性注意。但也有研究发现恐惧会减轻疼痛感知，Rhudy & Meagher (2000)发现在电刺激诱发的恐惧情绪条件下个体对疼痛的反应会减少。恐惧对疼痛作用的不同可能是由于不同实验所诱发的恐惧情绪水平不一样造成的。

3.2. 认知对疼痛的影响

疼痛感知是个体对感受到的刺激进行认知–评估的过程，认知在疼痛感知中扮演着十分重要的角色。当个体认为刺激是危险的和具有伤害性时，个体倾向于认为疼痛的强度更强、感受更不愉悦，并且表现出更多的逃避行为。一般认为，认知可能是通过影响个体的情绪状态来影响疼痛感受。个体对疼痛的认知主要包括对疼痛的评估，灾难化信念和控制感等。临床研究发现，疼痛相关的信念、应对策略和灾难化等认知因素与慢性疼痛病人的疼痛感知密切相关，并且可以通过调节心理因素来改善慢性疼痛的治疗效果(Turner, Jensen, & Romano, 2000)。

疼痛评估是指个体对疼痛的性质、原因和可控性等的评价和估计。疼痛刺激的评估可以对疼痛感知产生显著的影响。疼痛的意义会影响个体的主观感觉，当疼痛刺激被认为是具有伤害性作用时，被试认为疼痛的强度更强(Arntz & Claassens, 2004)。Smith, Gracely 和 Safer (1998)发现对癌症治疗手术后疼痛的评估会受个体对术后疼痛认知的影响，认为疼痛是有手术引起的病人会比认为疼痛是癌症引起的病人感受到显著低的疼痛强度和不愉悦度。

疼痛灾难化信念是个体对疼痛的过度的负性认知偏向。疼痛的灾难化信念与个体的疼痛恐惧联系密切，可能通过恐惧情绪来影响疼痛感知。疼痛灾难化会引起个体对疼痛的其他不恰当的信念，并进而影响个体对疼痛的感知。在慢性疼痛的治疗中，疼痛灾难化信念能够影响疼痛治疗的效果(Severeijns, Vlaeyen, van den Hout, & Picavet, 2005; Smeets, Vlaeyen, Kester, & Knottnerus, 2006)。临床上会使用认知行为疗法等手段改变个体的疼痛灾难化信念从而减轻慢性疼痛个体的疼痛。

疼痛控制感是指个体对自己能否改变疼痛强度和持续时间的认识。疼痛控制感会影响个体对疼痛刺激的评估，进而影响个体对疼痛强度、不愉悦度的评价和个体的疼痛耐受性。疼痛控制感的缺失会引起焦虑、生气等不愉悦情绪，使个体知觉到的疼痛强度升高(Müller & Netter, 2000)。fMRI 实验发现，当疼痛被认为是可控的时候，疼痛感知的神经活动会受到影响，前扣带回、脑岛和次级感觉皮层的神经活动会减弱(Salomons, Johnstone, Backonja, & Davidson, 2004)。Samwel, Evers, Crul, & Kraaimaat (2006)的调查研究发现，无助感可以有效地预测慢性疼痛病人的疼痛水平，无助感和疼痛水平正相关。

自我效能感是指个体认为自己能干成某事并达到预期效果的一种信念。自我效能感可以影响个体的疼痛知觉，高自我效能感的个体对疼痛刺激表现出较少的不愉悦度，并且对疼痛的容忍度和疼痛阈限都显著提升(Keefe, Lefebvre, Maixner, Salley, & Caldwell, 1997)。在慢性疼痛患者的研究中也发现自我效能感可以有效的提高患者的身体和心理状态(Asghari & Nicholas, 2001; Woby, Watson, Roach, & Urmston, 2005)。改变自我效能感可以有效地减轻慢性疼痛病人的疼痛强度(Keefe et al., 1996; Parker et al., 1995)。自我效能感可以有效地减轻疼痛是因为高自我效能感的个体对减轻疼痛的活动表现出更高的积极性，当遇到障碍时也不会轻易放弃；而且高自我效能感的个体的心境会更积极。

3.3. 人格对疼痛的影响

人格是构成一个人思想、情感及行为的特有模式，是心理活动的重要组成部分。人格具有独特性、稳定性、整合性和功能性等特点，对个体的认知、情绪情感等有显著的影响。人格可以通过对疼痛的认知和情绪情感的作用来影响个体对疼痛的感知。因此，人格也是我们在疼痛研究中不能忽略的一个因素。

Harkins 等对肌筋膜疼痛障碍(MPD)患者的研究发现人格可以影响个体的疼痛感知和情绪情感。神经质对疼痛的感觉没有影响，但对疼痛引起的情绪情感的影响不同，神经质水平越高个体的疼痛不愉悦度也越高。而外向性则对疼痛的感觉和引起的情绪情感没有影响，但可以影响个体的疼痛表达。人格可能是通过影响人们对疼痛的认知过程来影响疼痛感知，而不是通过影响疼痛的感觉加工过程来影响。Wang, Ma & Han (2014)的研究发现个体的自我结构也会对疼痛的感知产生影响。实验中通过自我结构启动来短

暂地改变个体的自我结构，发现短暂的自我结构改变可以调节疼痛刺激早期感知和晚期评价相关的神经活动。这些研究都说明了个体的人格会对疼痛刺激的感知产生影响。

4. 疼痛与心理关系对临床的意义

通过对疼痛和心理之间关系的梳理，我们证实了疼痛不仅仅是个体对机体组织损伤信号的生理感受，而且疼痛也会对个体认知、情绪情感等心理活动产生显著的影响。与此同时，改变个体认知、情绪等心理因素也会对个体的疼痛感知产生影响。安慰剂止痛效应就是通过改变个体对疼痛的预期来调节个体的疼痛感知(Ploghaus, Becerra, Borras, & Borsook, 2003)。个体心理因素和疼痛感知之间相互影响，这就提示我们在疼痛研究中要注意心理因素的作用，特别是在临床治疗中更应该注意心理对疼痛感知的影响。

临床上，疼痛患者往往都伴随着一定的精神困扰。对疼痛的治疗应当在关注个体的疼痛感觉治疗的同时也要注意个体的心理问题。慢性疼痛的心理因素会影响个体的治疗动机和个体是否服从治疗，进而影响个体的疼痛治疗效果。在慢性疼痛的治疗过程中，我们在使用药物减轻个体疼痛感受的同时要注意个体的心理因素。通过心理方面的治疗来补充和增强药物治疗的效果，在最大程度上减轻患者的疼痛感受，改善治疗效果。

基金项目

河南省教育厅人文社会科学研究项目(2017-ZZJH-422)。

参考文献 (References)

吕振勇, 纪晓蕾, 黄丽, Jackson, Todd, 陈红(2013). 疼痛恐惧对疼痛的影响及其认知机制. *心理科学进展, 21(5),* 817-826.

孟景, 沈林, 陈红(2011). 疼痛对心理的影响及其机制. *心理科学进展, 19(10),* 1493-1501.

Alanoğlu, E., Ulaş, U. H., Özdağ, F., Odabaşı, Z., Çakçı, A., & Vural, O. (2005). Auditory Event-Related Brain Potentials in Fibromyalgia Syndrome. *Rheumatology International, 25,* 345-349. https://doi.org/10.1007/s00296-004-0443-3

Almeida, T. F., Roizenblatt, S., & Tufik, S. (2004). Afferent Pain Pathways: A Neuroanatomical Review. *Brain Research, 1000,* 40-56. https://doi.org/10.1016/j.brainres.2003.10.073

Antepohl, W., Kiviloog, L., Andersson, J., & Gerdle, B. (2003). Cognitive Impairment in Patients with Chronic Whiplash-Associated Disorder—A Matched Control Study. *NeuroRehabilitation, 18,* 307-315.

Arntz, A., & Claassens, L. (2004). The Meaning of Pain Influences Its Experienced Intensity. *Pain, 109,* 20-25. https://doi.org/10.1016/j.pain.2003.12.030

Asghari, A., & Nicholas, M. K. (2001). Pain Self-Efficacy Beliefs and Pain Behaviour. A Prospective Study. *Pain, 94,* 85-100. https://doi.org/10.1016/S0304-3959(01)00344-X

Asmundson, G. J. G., Norton, P. J., & Norton, G. R. (1999). Beyond Pain: The Role of Fear and Avoidance in Chronicity. *Clinical Psychology Review, 19,* 97-119. https://doi.org/10.1016/S0272-7358(98)00034-8

Bailey, K. M., Carleton, R. N., Vlaeyen, J. W. S., & Asmundson, G. J. G. (2010). Treatments Addressing Pain-Related Fear and Anxiety in Patients with Chronic Musculoskeletal Pain: A Preliminary Review. *Cognitive Behaviour Therapy, 39,* 46-63. https://doi.org/10.1080/16506070902980711

Banik, R., Kouya, F., & Iqbal, Z. (2010). Acute Postoperative Pain Induces Anxiety-Like Behaviors in a Rat Model. *The Journal of Pain, 11,* S27. https://doi.org/10.1016/j.jpain.2010.01.116

Bement, M., Weyer, A., Keller, M., Harkins, A. L., & Hunter, S. K. (2010). Anxiety and Stress Can Predict Pain Perception Following a Cognitive Stress. *Physiology & Behavior, 101,* 87-92. https://doi.org/10.1016/j.physbeh.2010.04.021

Bosma, F. K., & Kessels, R. P. C. (2002). Cognitive Impairments, Psychological Dysfunction, and Coping Styles in Patients with Chronic Whiplash Syndrome. *Neuropsychiatry, Neuropsychology, and Behavioral Neurology, 15,* 56-65.

Buffington, A. L. H., Hanlon, C. A., & McKeown, M. J. (2005). Acute and Persistent Pain Modulation of Attention-Related Anterior Cingulate fMRI Activations. *Pain, 113,* 172-184. https://doi.org/10.1016/j.pain.2004.10.006

Burns, J. W. (1997). Anger Management Style and Hostility: Predicting Symptom-Specific Physiological Reactivity among Chronic Low Back Pain Patients. *Journal of Behavioral Medicine, 20,* 505-522. https://doi.org/10.1023/A:1025564707137

Calandre, E. P., Bembibre, J., Arnedo, M. L., & Becerra, D. (2002). Cognitive Disturbances and Regional Cerebral Blood Flow Abnormalities in Migraine Patients: Their Relationship with the Clinical Manifestations of the Illness. *Cephalalgia, 22,* 291-302. https://doi.org/10.1046/j.1468-2982.2002.00370.x

Campo, J. V., Bridge, J., Ehmann, M., Altman, S., Lucas, A., Birmaher, B., Brent, D. A. et al. (2004). Recurrent Abdominal Pain, Anxiety, and Depression in Primary Care. *Pediatrics, 113,* 817-824. https://doi.org/10.1542/peds.113.4.817

Chou, K.-L.. (2007). Reciprocal Relationship between Pain and Depression in Older Adults: Evidence from the English Longitudinal Study of Ageing. *Journal of Affective Disorders, 102,* 115-123. https://doi.org/10.1016/j.jad.2006.12.013

Dersh, J., Gatchel, R. J., Mayer, T., Polatin, P., & Temple, O. R. (2006). Prevalence of Psychiatric Disorders in Patients with Chronic Disabling Occupational Spinal Disorders. *Spine, 31,* 1156-1162. https://doi.org/10.1097/01.brs.0000216441.83135.6f

Dick, B. D., & Rashiq, S. (2007). Disruption of Attention and Working Memory Traces in Individuals with Chronic Pain. *Anesthesia & Analgesia, 104,* 1223-1229. https://doi.org/10.1213/01.ane.0000263280.49786.f5

Dick, B., Eccleston, C., & Crombez, G. (2002). Attentional Functioning in Fibromyalgia, Rheumatoid Arthritis, and Musculoskeletal Pain Patients. *Arthritis Care & Research, 47,* 639-644. https://doi.org/10.1002/art.10800

Fernandez, E., & Turk, D. C. (1995). The Scope and Significance of Anger in the Experience of Chronic Pain. *Pain, 61,* 165-175. https://doi.org/10.1016/0304-3959(95)00192-U

Gaskin, M. E., Greene, A. F., Robinson, M. E., & Geisser, M. E. (1992). Negative Affect and the Experience of Chronic Pain. *Journal of Psychosomatic Research, 36,* 707-713. https://doi.org/10.1016/0022-3999(92)90128-O

Gatchel, R. J., Peng, Y., Peters, M., Fuchs, P., & Turk, D. (2007). The Biopsychosocial Approach to Chronic Pain: Scientific Advances and Future Directions. *Psychological Bulletin, 133,* 581-624. https://doi.org/10.1037/0033-2909.133.4.581

Grisart, J., & Van der Linden, M. (2001). Conscious and Automatic Uses of Memory in Chronic Pain Patients. *Pain, 94,* 305-313. https://doi.org/10.1016/S0304-3959(01)00366-9

Harman, K., & Ruyak, P. (2005). Working through the Pain: A Controlled Study of the Impact of Persistent Pain on Performing a Computer Task. *The Clinical Journal of Pain, 21,* 216-222. https://doi.org/10.1097/00002508-200505000-00004

Karp, J. F., Reynolds, C. F., Butters, M. A., Dew, M., Mazumdar, Sati, B., Amy, E., Weiner, D. et al. (2006). The Relationship between Pain and Mental Flexibility in Older Adult Pain Clinic Patients. *Pain Medicine, 7,* 444-452. https://doi.org/10.1111/j.1526-4637.2006.00212.x

Katon, W., Egan, K., & Miller, D. (1985). Chronic Pain: Lifetime Psychiatric Diagnoses. *American Journal of Psychiatry, 142,* 1156-1160. https://doi.org/10.1176/ajp.142.10.1156

Keefe, F., Caldwell, D., Baucom, D., Salley, A., Robinson, E., Timmons, K., Helms, M. et al. (1996). Spouse-Assisted Coping Skills Training in the Management of Osteoarthritic Knee Pain. *Arthritis & Rheumatism, 9,* 279-291. https://doi.org/10.1002/1529-0131(199608)9:4<279::AID-ANR1790090413>3.0.CO;2-6

Keefe, F. J., Lefebvre, J. C., Maixner, W., Salley, A. N., & Caldwell, D. S. (1997). Self-Efficacy for Arthritis Pain: Relationship to Perception of Thermal Laboratory Pain Stimuli. *Arthritis & Rheumatism, 10,* 177-184. https://doi.org/10.1002/art.1790100305

Kerns, R. D., Rosenberg, R., & Jacob, M. (1994). Anger Expression and Chronic Pain. *Journal of Behavioral Medicine, 17,* 57-67. https://doi.org/10.1007/BF01856882

Kewman, D. G, Vaishampayan, N., Zald, D., & Han, B. (1991). Cognitive Impairment in Musculoskeletal Pain Patients. *The International Journal of Psychiatry in Medicine, 21,* 253-262. https://doi.org/10.2190/FRYK-TMGA-AULW-BM5G

Khatibi, A., Dehghani, M., Sharpe, L., Asmundson, G., & Pouretemad, H. (2009). Selective Attention towards Painful Faces among Chronic Pain Patients: Evidence from a Modified Version of the Dot-Probe. *Pain, 142,* 42-47. https://doi.org/10.1016/j.pain.2008.11.020

Kirwilliam, S. S., & Derbyshire, S. W. G. (2008). Increased Bias to Report Heat or Pain Following Emotional Priming of Pain-Related Fear. *Pain, 137,* 60-65. https://doi.org/10.1016/j.pain.2007.08.012

Leavitt, F., & Katz, R. S. (2006). Distraction as a Key Determinant of Impaired Memory in Patients with Fibromyalgia. *The Journal of Rheumatology, 33,* 127-132.

Lee, D. M., Pendleton, N., Tajar, A., O'Neill, T. W., O'Connor, D. B., Bartfai, G., Forti, G. et al. (2010). Chronic Widespread Pain Is Associated with Slower Cognitive Processing Speed in Middle-Aged and Older European Men. *Pain, 151,* 30-36. https://doi.org/10.1016/j.pain.2010.04.024

Luerding, R., Weigand, T., Bogdahn, U., & Schmidt-Wilcke, T. (2008). Working Memory Performance Is Correlated with Local Brain Morphology in the Medial Frontal and Anterior Cingulate Cortex in Fibromyalgia Patients: Structural Correlates of Pain-Cognition Interaction. *Brain, 131,* 3222-3231. https://doi.org/10.1093/brain/awn229

McCracken, L. M., & Gross, R. T. (1998). The Role of Pain-Related Anxiety Reduction in the Outcome of Multidisciplinary

Treatment for Chronic Low Back Pain: Preliminary Results. *Journal of Occupational Rehabilitation, 8,* 179-189. https://doi.org/10.1023/A:1021374322673

McCracken, L. M., & Iverson, G. L. (2001). Predicting Complaints of Impaired Cognitive Functioning in Patients with Chronic Pain. *Journal of Pain and Symptom Management, 21,* 392-396. https://doi.org/10.1016/S0885-3924(01)00267-6

Meagher, M. W., Arnau, R. C., & Rhudy, J. L. (2001). Pain and Emotion: Effects of Affective Picture Modulation. *Psychosomatic Medicine, 63,* 79-90. https://doi.org/10.1097/00006842-200101000-00010

Merboth, M. K, & Barnason, S. (2000). Managing Pain: The Fifth Vital Sign. *The Nursing Clinics of North America, 35,* 375-383.

Merskey, H., & Bogduk, N. (1994). *Classification of Chronic Pain, IASP Task Force on Taxonomy*. Seattle, WA: International Association for the Study of Pain Press. www.iasp-painorg

Moriarty, O., McGuire, B. E., & Finn, D. P. (2011). The Effect of Pain on Cognitive Function: A Review of Clinical and Preclinical Research. *Progress in Neurobiology, 93,* 385-404. https://doi.org/10.1016/j.pneurobio.2011.01.002

Müller, M. J., & Netter, P. (2000). Relationship of Subjective Helplessness and Pain Perception after Electric Skin Stimuli. *Stress Medicine, 16,* 109-115.

Munoz, M., & Esteve, R. (2005). Reports of Memory Functioning by Patients with Chronic Pain. *The Clinical Journal of Pain, 21,* 287-291. https://doi.org/10.1097/01.ajp.0000173993.53733.2e

Okifuji, A., Turk, D. C., & Curran, S. L. (1999). Anger in Chronic Pain: Investigations of Anger Targets and Intensity. *Journal of Psychosomatic Research, 47,* 1-12. https://doi.org/10.1016/S0022-3999(99)00006-9

Oosterman, J., Derksen, L., van Wijck, A. J. M., Veldhuijzen, D. S., & Kessels, R. P. C. (2011). Memory Functions in Chronic Pain: Examining Contributions of Attention and Age to Test Performance. *The Clinical Journal of Pain, 27,* 70-75. https://doi.org/10.1097/AJP.0b013e3181f15cf5

Park, D. C., Glass, J. M., Minear, M., & Crofford, L. J. (2001). Cognitive Function in Fibromyalgia Patients. *Arthritis & Rheumatism, 44,* 2125-2133. https://doi.org/10.1002/1529-0131(200109)44:9<2125::AID-ART365>3.0.CO;2-1

Parker, J. C., Smarr, K. L., Buckelew, S. P., Stucky-Ropp, R. C., Hewett, J. E., Johnson, J. C., Walker, S. E. et al. (1995). Effects of Stress Management on Clinical Outcomes in Rheumatoid Arthritis. *Arthritis & Rheumatism, 38,* 1807-1818. https://doi.org/10.1002/art.1780381214

Parmelee, P. A., Harralson, T. L., Smith, L. A., & Schumacher, H. R. (2007). Necessary and Discretionary Activities in Knee Osteoarthritis: Do They Mediate the Pain-Depression Relationship? *Pain Medicine, 8,* 449-461. https://doi.org/10.1111/j.1526-4637.2007.00310.x

Pavlin, D J., Rapp, S. E., Polissar, N. L., Malmgren, J. A., Koerschgen, M., & Keyes, H. (1998). Factors Affecting Discharge time in Adult Outpatients. *Anesthesia & Analgesia, 87,* 816-826.

Ploghaus, A., Becerra, L., Borras, C., & Borsook, D. (2003). Neural Circuitry Underlying Pain Modulation: Expectation, Hypnosis, Placebo. *Trends in Cognitive Sciences, 7,* 197-200. https://doi.org/10.1016/S1364-6613(03)00061-5

Price, D. D., Finniss, D. G., & Benedetti, F. (2008). A Comprehensive Review of the Placebo Effect: Recent Advances and Current Thought. *Annual Review of Psychology, 59,* 565-590. https://doi.org/10.1146/annurev.psych.59.113006.095941

Rhudy, J. L., & Meagher, M. W. (2000). Fear and Anxiety: Divergent Effects on Human Pain Thresholds. *Pain, 84,* 65-75. https://doi.org/10.1016/S0304-3959(99)00183-9

Salomons, T. V., Johnstone, T., Backonja, M.-M., & Davidson, R. J. (2004). Perceived Controllability Modulates the Neural Response to Pain. *The Journal of Neuroscience, 24,* 7199-7203. https://doi.org/10.1523/JNEUROSCI.1315-04.2004

Samwel, H. J. A., Evers, A. W. M., Crul, B. J. P., & Kraaimaat, F. W. (2006). The Role of Helplessness, Fear of Pain, and Passive Pain-Coping in Chronic Pain Patients. *The Clinical Journal of Pain, 22,* 245-251. https://doi.org/10.1097/01.ajp.0000173019.72365.f5

Schellinck, H. M., Stanford, L., & Darrah, M. (2003). Repetitive Acute Pain in Infancy Increases Anxiety but Does Not Alter Spatial Learning Ability in Juvenile Mice. *Behavioural Brain Research, 142,* 157-165. https://doi.org/10.1016/S0166-4328(02)00406-0

Schwartz, L., Slater, M. A., Birchler, G. R., & Atkinson, J. H. (1991). Depression in Spouses of Chronic Pain Patients: The Role of Patient Pain and Anger, and Marital Satisfaction. *Pain, 44,* 61-67. https://doi.org/10.1016/0304-3959(91)90148-Q

Severeijns, R., Vlaeyen, J. W. S., van den Hout, M. A., & Picavet, H. S. J. (2005). Pain Catastrophizing and Consequences of Musculoskeletal Pain: A Prospective Study in the Dutch Community. *The Journal of Pain, 6,* 125-132. https://doi.org/10.1016/j.jpain.2004.11.006

Smeets, R., Vlaeyen, J., Kester, A., & Knottnerus, J. A. (2006). Reduction of Pain Catastrophizing Mediates the Outcome of Both Physical and Cognitive-Behavioral Treatment in Chronic Low Back Pain. *The Journal of Pain, 7,* 261-271. https://doi.org/10.1016/j.jpain.2005.10.011

Smith, W. B., Gracely, R., & Safer, M. (1998). The Meaning of Pain: Cancer Patients' Rating and Recall of Pain Intensity and Affect. *Pain, 78,* 123-129. https://doi.org/10.1016/S0304-3959(98)00122-5

Stegen, K., Van Diest, I., Van de Woestijne, K., & Van den Bergh, O. (2000). Negative Affectivity and Bodily Sensations Induced by 5.5% CO_2 Enriched Air Inhalation: Is There a Bias to Interpret Bodily Sensations Negatively in Persons with Negative Affect? *Psychology and Health, 15,* 513-525. https://doi.org/10.1080/08870440008402010

Summers, J., Rapoff, M., Varghese, G., Porter, K., & Palmer, R. (1991). Psychosocial Factors in Chronic Spinal Cord Injury Pain. *Pain, 47,* 183-189. https://doi.org/10.1016/0304-3959(91)90203-A

Turk, D. C., & Monarch, E. S. (1996). Biopsychosocial Perspective on Chronic Pain. In D. C. Turk, & R. J. Gatchel (Eds.), *Psychological Approaches to Pain Management: A Practitioner's Handbook* (pp. 3-32). New York: Guilford Press.

Turk, D. C., & Wilson, H. D. (2010). Fear of Pain as a Prognostic Factor in Chronic Pain: Conceptual Models, Assessment, and Treatment Implications. *Current Pain and Headache Reports, 14,* 88-95. https://doi.org/10.1007/s11916-010-0094-x

Turk, D. C., Okifuji, A., & Scharff, L. (1995). Chronic Pain and Depression: Role of Perceived Impact and Perceived Control in Different Age Cohorts. *Pain, 61,* 93-101. https://doi.org/10.1016/0304-3959(94)00167-D

Turner, J. A., Jensen, M. P., & Romano, J. M. (2000). Do Beliefs, Coping, and Catastrophizing Independently Predict Functioning in Patients with Chronic Pain? *Pain, 85,* 115-125. https://doi.org/10.1016/S0304-3959(99)00259-6

Verdejo-Garcia, A., López-Torrecillas, F., Calandre, E., Delgado-Rodríguez, A., & Bechara, A. (2009). Executive Function and Decision-Making in Women with Fibromyalgia. *Archives of Clinical Neuropsychology, 24,* 113-122. https://doi.org/10.1093/arclin/acp014

Wade, J. B., Price, D. D., Hamer, R. M., Schwartz, S. M., & Hart, R. P. (1990). An Emotional Component Analysis of Chronic Pain. *Pain, 40,* 303-310. https://doi.org/10.1016/0304-3959(90)91127-5

Wang, C., Ma, Y., & Han, S. (2014). Self-Construal Priming Modulates Pain Perception: Event-Related Potential Evidence. *Cognitive Neuroscience, 5,* 3-9. https://doi.org/10.1080/17588928.2013.797388

Woby, S., Watson, P., Roach, N., & Urmston, M. (2005). Coping Strategy Use: Does It Predict Adjustment to Chronic Back Pain after Controlling for Catastrophic Thinking and Self-Efficacy for Pain Control? *Journal of Rehabilitation Medicine, 37,* 100-107. https://doi.org/10.1080/16501970410021535

Wolfe, F., Smythe, H. A., Yunus, M. B., Bennett, R. M., Bombardier, C., Goldenberg, D. L., Clark, P. et al. (1990). The American College of Rheumatology 1990 Criteria for the Classification of Fibromyalgia. *Arthritis & Rheumatism, 33,* 160-172. https://doi.org/10.1002/art.1780330203

Hans 汉斯

期刊投稿者将享受如下服务：

1. 投稿前咨询服务 (QQ、微信、邮箱皆可)
2. 为您匹配最合适的期刊
3. 24 小时以内解答您的所有疑问
4. 友好的在线投稿界面
5. 专业的同行评审
6. 知网检索
7. 全网络覆盖式推广您的研究

投稿请点击：http://www.hanspub.org/Submission.aspx
期刊邮箱：ap@hanspub.org