Chronic Pain & Dialectical Behavioural Therapy

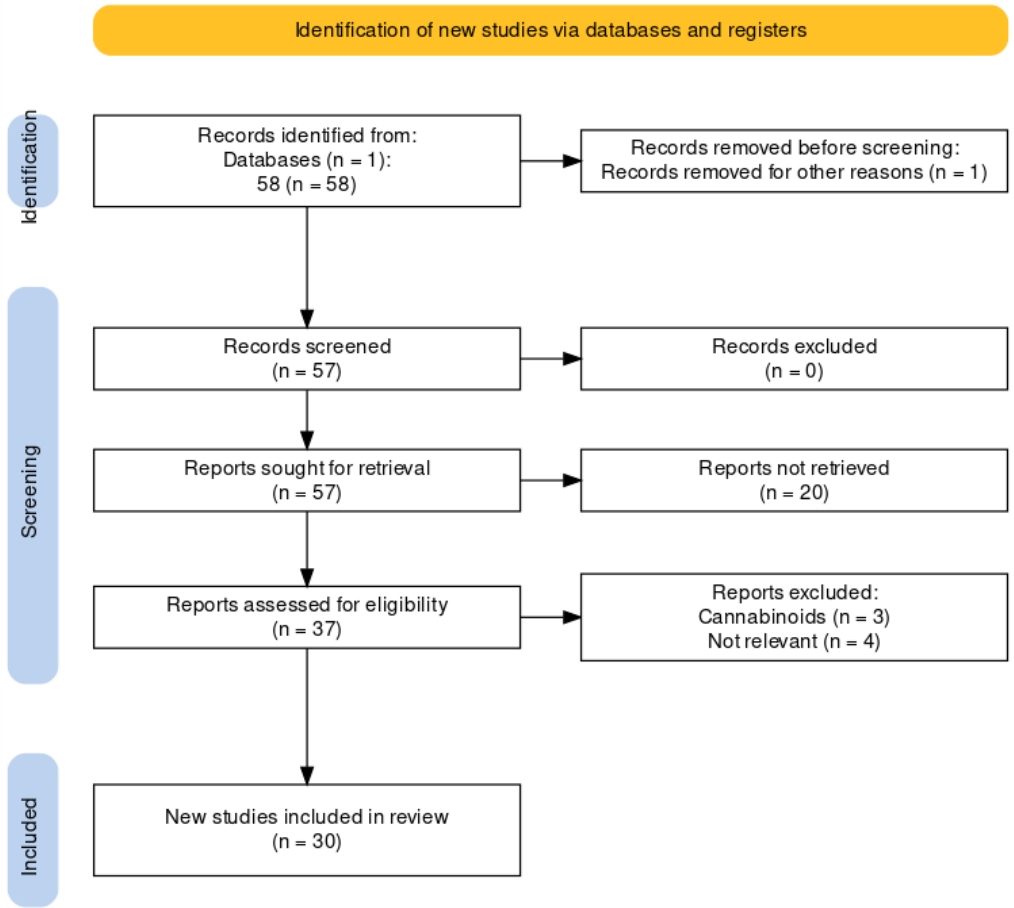
Dr. Arnav Sharma

Outline

- Search Strategy
- Epidemiology
- Aetiology
- Psychophysiological Approach
- Role of DBT
- Conclusion

Search Strategy

PRISMA
TRANSPARENT REPORTING OF SYSTEMATIC REVIEWS AND META-ANALYSES



- Database- PubMed
- Keywords: “Chronic Pain” & “Psychiatry”
- Filters Applied:
  - Meta-Analysis
  - 5 years

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T., Mulrow, C. D., Shamseer, L., Tetzlaff, J., Akl, E. A., Brennan, S., Chou, R., Glanville, J., Grimshaw, J., Hrõbjartsson, A., Lalu, M. M., Li, T., Loder, E., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *The BMJ*, n71. https://doi.org/10.1136/bmj.n71

Search Strategy

Systematic Reviews VS Meta-Analysis

They are both based on high-quality filtered evidence related to a specific research topic and highly regarded as generally resulting in reliable findings. Additionally, they both support conclusions based on expert reviews, case-controlled studies and data analysis.

WHY ARE SYSTEMATIC REVIEWS IMPORTANT?	WHY IS META-ANALYSIS IMPORTANT?
They combine and synthesize various studies and their findings.	They help improve precision about evidence since many studies are too small to provide convincing data.
Systematic reviews appraise the validity of the results and findings of the collected studies in an impartial way.	Meta-analyses can settle divergences between conflicting studies. By formally assessing the conflicting study results, it is possible to eventually reach new hypotheses and explore the reasons for controversy.
They define clear objectives and reproducible methodologies.	They can also answer questions with a broader influence than individual studies. For example, the effect of a disease on several populations across the world, by comparing other modest research studies completed in specific countries or continents.

Elsevier Author Services. (2023, August 4). *Systematic Review VS Meta-Analysis | Elsevier blog*. Elsevier Author Services - Articles. https://scientific-publishing.webshop.elsevier.com/manuscript-review/systematic-review-vs-meta-analysis/

Search Strategy

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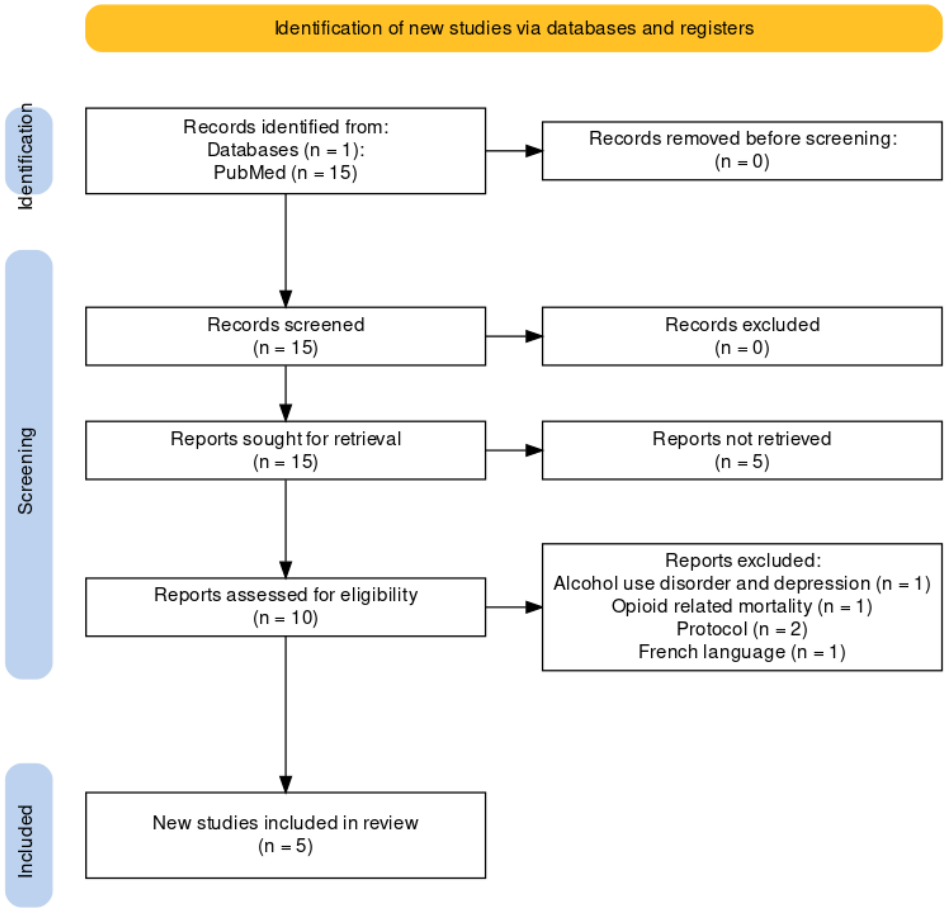
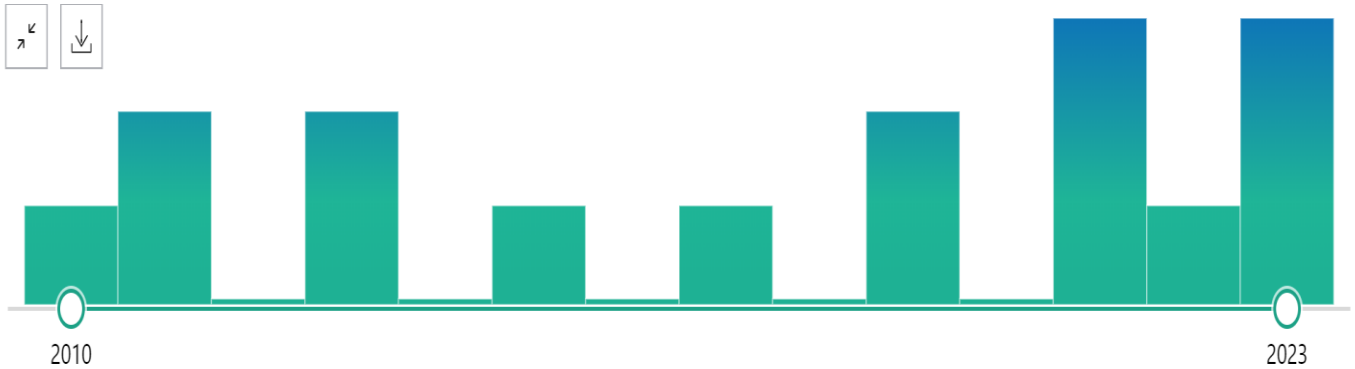


- Keywords: “Chronic Pain” & “Dialectical Behavioural Therapy”
- Filters Applied:
  - None



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Epidemiology

- Chronic noncancer pain costs the United States up to $635 billion annually in direct medical costs, lost productivity, and disability programs, more than the cost for cancer, diabetes, or heart disease.

Barrett D, Brintz CE, Zaski AM, Edlund MJ. Dialectical Pain Management: Feasibility of a Hybrid Third-Wave Cognitive Behavioral Therapy Approach for Adults Receiving Opioids for Chronic Pain. Pain Med. 2021 May 21;22(5):1080-1094. doi: 10.1093/pm/pnaa361. PMID: 33175158; PMCID: PMC8139810.

Epidemiology

“The Prevalence of Chronic Pain among Adults in India”

-Saxena et al, 2006

- CP-sufferer should have:

1. Suffered from more than 3 months
2. Suffered pain during last month
3. Suffered pain several times a week
4. Intensity of pain more than 4/10.

Saxena, A. K., Jain, P. N., & Bhatnagar, S. (2018). The Prevalence of Chronic Pain among Adults in India. *Indian journal of palliative care*, *24*(4), 472–477. https://doi.org/10.4103/IJPC.IJPC_141_18

Epidemiology

Indian Journal of Palliative Care
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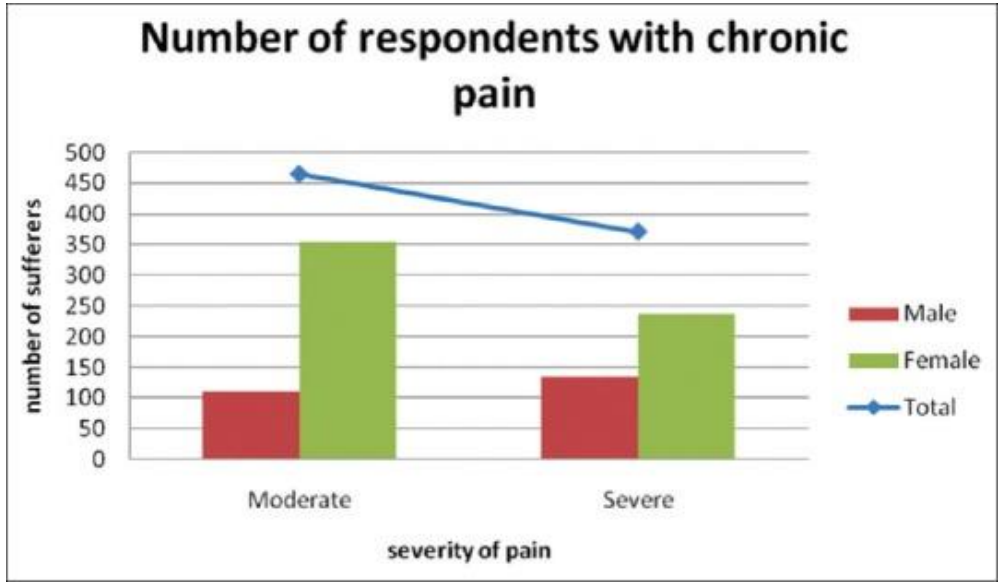
- 4326 Indian patients were screened, and 836 completed a detailed pain questionnaire during 2006.

- Prevalence= 19.3%, (*n* = 836),
  - Females (25.2%)
  - Increased steeply beyond the age of 65 years.
- There was a significant impact of CP on work and daily function



Gender	Average duration of pain (years)
Males	5.06
Females	3.59
Total	4.2

Saxena, A. K., Jain, P. N., & Bhatnagar, S. (2018). The Prevalence of Chronic Pain among Adults in India. *Indian journal of palliative care*, *24*(4), 472–477. https://doi.org/10.4103/IJPC.IJPC_141_18

Epidemiology

Indian Journal of Palliative Care
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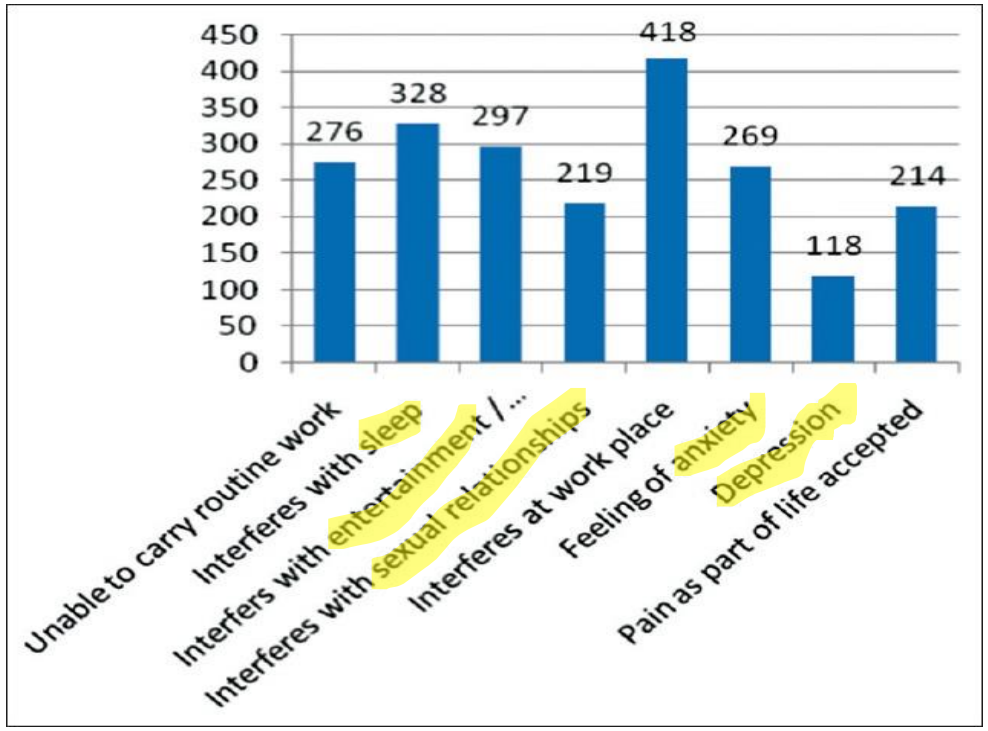
Age groups	Total ($n=836$)	Male ($n=245$)	Female ($n=591$)
18-40	243	68	175
40-60	274	80	194
60-80	319	97	222



Specialist	Chronic pain patients, *n* (%)
Orthopedician	115 (19.2)
General physician	253 (42.4)
Cardiologist	26 (4.4)
Neurologist	32 (5.4)
Psychiatrist	31 (5.2)
Pain physician	29 (4.8)
Homeopathic/Ayurvedic	110 (18.4)

Treatment	Chronic pain patients, *n* (%)
Massage and physical therapy	292 (35)
Yoga and meditation	284 (34)
Acupuncture	42 (5)
OTC drugs	295 (35)
Prescription drugs	308 (37)
Homeopathy	181 (22)
Ayurveda	134 (16)
Not on any regular medication	128 (15)
Unaware of medications	131 (16)

OTC: Over-the-counter

Saxena, A. K., Jain, P. N., & Bhatnagar, S. (2018). The Prevalence of Chronic Pain among Adults in India. *Indian journal of palliative care*, *24*(4), 472–477. https://doi.org/10.4103/IJPC.IJPC_141_18

Aetiology

Indian Journal of Palliative Care
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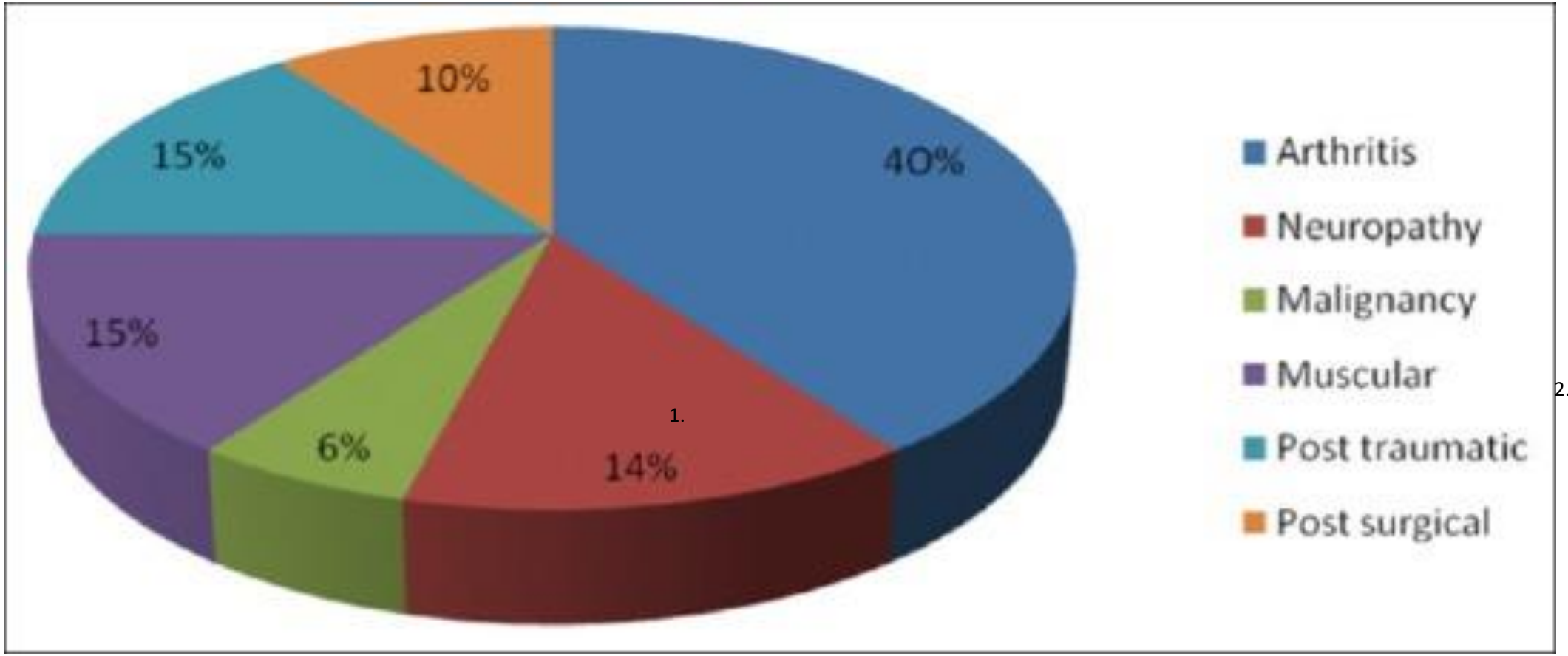

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Saxena, A. K., Jain, P. N., & Bhatnagar, S. (2018). The Prevalence of Chronic Pain among Adults in India. *Indian journal of palliative care*, *24*(4), 472–477. https://doi.org/10.4103/IJPC.IJPC_141_18

Aetiology

- Chronic pain is now understood as a **Biopsychosocial disorder**, with a complex interplay among psychological, social, contextual, and biological factors that reciprocally contribute to pain intensity and disability.

Sources of pain	
Back	12 (70.6%)
Arthritis	7 (41.2%)
Fibromyalgia	6 (35.3%)
Neck	5 (29.4%)
Neuropathy	5 (29.4%)
Headache	2 (11.8%)
Complex Regional Pain Syndrome	2 (11.8%)
Pelvic	1 (5.9%)
Other	6 (35.3%)
Number of sources of pain	
1	3 (17.6%)
2	7 (41.2%)
3 or greater	7 (41.2%)
Taking two opioids daily (remaining taking one)	10 (58.8%)
Daily morphine equivalents (mg)	165.22±123.41 (30–510)

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Psychophysiological Approach

- Limbic system (in particular, the amygdale) has the capacity to up- or down-regulate pain's emotional response.
- Strong communication from an experience is transmitted to the hippocampus for memory integration and storage so the subjective experience of pain.
- This can be modulated by a wide range of environmental and internal stimuli via the nociceptive amygdale.
- Correlated with increased inflammation, mental health impairments can result in both vascular and autoimmune disease through bidirectional interactions between the brain and peripheral tissues

Purdy J. (2013). Chronic physical illness: a psychophysiological approach for chronic physical illness. *The Yale journal of biology and medicine*, *86*(1), 15–28.

Psychophysiological Approach

- Well-established data pointing to the efficacy of cognitive-behavioral interventions.
- Along with emerging data supportive of combining this methodology with acceptance-oriented treatments.
- These interventions could potentially address underlying etiological mechanisms, improve self efficacy, and decrease hippocampal sensitization.

Purdy J. (2013). Chronic physical illness: a psychophysiological approach for chronic physical illness. *The Yale journal of biology and medicine*, *86*(1), 15–28.

Psychophysiological Approach

- Circuits are formed within neural connections between the cortex, limbic system, and autonomic system in response to developmental experiences.

- Author further hypothesis that adverse developmental experiences can result in the brain circuitry formulation that has the potential to contribute to physical disease

- Thus it stands to reason that effective psychotherapy could intervene and positively affect physical outcomes.

Purdy J. (2013). Chronic physical illness: a psychophysiological approach for chronic physical illness. *The Yale journal of biology and medicine*, *86*(1), 15–28.

Role of DBT

- Cognitive behavioral therapy (CBT) has been the primary psychotherapeutic approach to chronic pain for more than three decades and enjoys the strongest evidence base.

- Traditional CBT for chronic pain (CBT-CP) emphasizes skills to help people change thoughts and behaviors in order to reduce pain and improve functioning.

- Such skills include relaxation, activity pacing, sleep hygiene, scheduling pleasant activities, and the identification and modification of cognitive distortions

Purdy J. (2013). Chronic physical illness: a psychophysiological approach for chronic physical illness. *The Yale journal of biology and medicine*, *86*(1), 15–28.

Role of DBT

- Acceptance and commitment therapy (ACT) is a cognitive-behavioral approach that has shown promise for improving functioning, quality of life, and distress across various CHCs, including HIV, cancer, epilepsy, and chronic pain

- Both CBT and ACT as well as other mindfulness-based interventions, have been shown to offer small to moderate benefits for people with chronic pain

Barrett D, Brintz CE, Zaski AM, Edlund MJ. Dialectical Pain Management: Feasibility of a Hybrid Third-Wave Cognitive Behavioral Therapy Approach for Adults Receiving Opioids for Chronic Pain. Pain Med. 2021 May 21;22(5):1080-1094. doi: 10.1093/pm/pnaa361. PMID: 33175158; PMCID: PMC8139810.

Role of DBT

- CBT focuses primarily on managing and coping with pain, whereas ACT focuses on accepting one's symptoms and living life regardless of pain.

- The contrast between CBT and ACT approaches mirrors debates in the broader field of pain management: whether to improve functionality by reducing symptom intensity and shoring up coping skills or improve functionality regardless of symptom intensity.

Barrett D, Brintz CE, Zaski AM, Edlund MJ. Dialectical Pain Management: Feasibility of a Hybrid Third-Wave Cognitive Behavioral Therapy Approach for Adults Receiving Opioids for Chronic Pain. Pain Med. 2021 May 21;22(5):1080-1094. doi: 10.1093/pm/pnaa361. PMID: 33175158; PMCID: PMC8139810.

Role of DBT

- Can be hypothesized that people with chronic pain will benefit from a combination of these two seemingly contradictory approaches.

- This synthesis is at the heart of dialectical behavior therapy (DBT).

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Role of DBT

Results of paired *t* tests on pain and psychosocial outcomes

Variable	Before Intervention, Mean (SD)	After Intervention, Mean (SD)	Mean Difference, Post – Pre (SE)	95% CI of Mean Difference	*P* Value
BPI-Severity	5.90 (1.14)	5.93 (0.89)	0.03 (0.26)	[-0.53, 0.59]	0.913
BPI-Interference	6.30 (1.89)	5.75 (1.62)	−0.55 (0.34)	[-1.30, 0.19]	0.131
CPAQ–Pain Willingness	**16.15 (9.26)**	**25.46 (10.08)**	**9.31 (2.21)**	**[4.50, 14.12]**	**0.001**
CPAQ–Activity Engagement	**32.92 (11.70)**	**39.38 (12.55)**	**6.46 (2.83)**	**[0.31, 12.62]**	**0.041**
CPAQ–Total Score	**49.08 (19.03**	**64.85 (18.80)**	**15.77 (3.93)**	**[7.22, 24.32]**	**0.002**
PHQ-9 Depression	**13.23 (6.11)**	**9.38 (3.80)**	**-3.85 (1.57)**	**[-7.26, -0.43]**	**0.030**
MedBeliefs–Necessity	18.92 (4.25)	17.77 (5.92)	−1.15 (0.99)	[-3.30, 0.99]	0.265
Med Beliefs–Concern	15.69 (4.87)	15.23 (4.49)	−0.46 (0.85)	[-2.32, 1.40]	0.598
Med–Goal to reduce	4.23 (1.01)	3.85 (1.28)	−0.39 (0.27)	[-0.97, 0.20]	0.175

- Seventeen adults with chronic pain who were 28 to 75 years of age (mean age=54 years) enrolled in the study.
- DPM is a group skills-based intervention including eight weekly group sessions (1 hour and 45 minutes each) with six to nine participants in each group.

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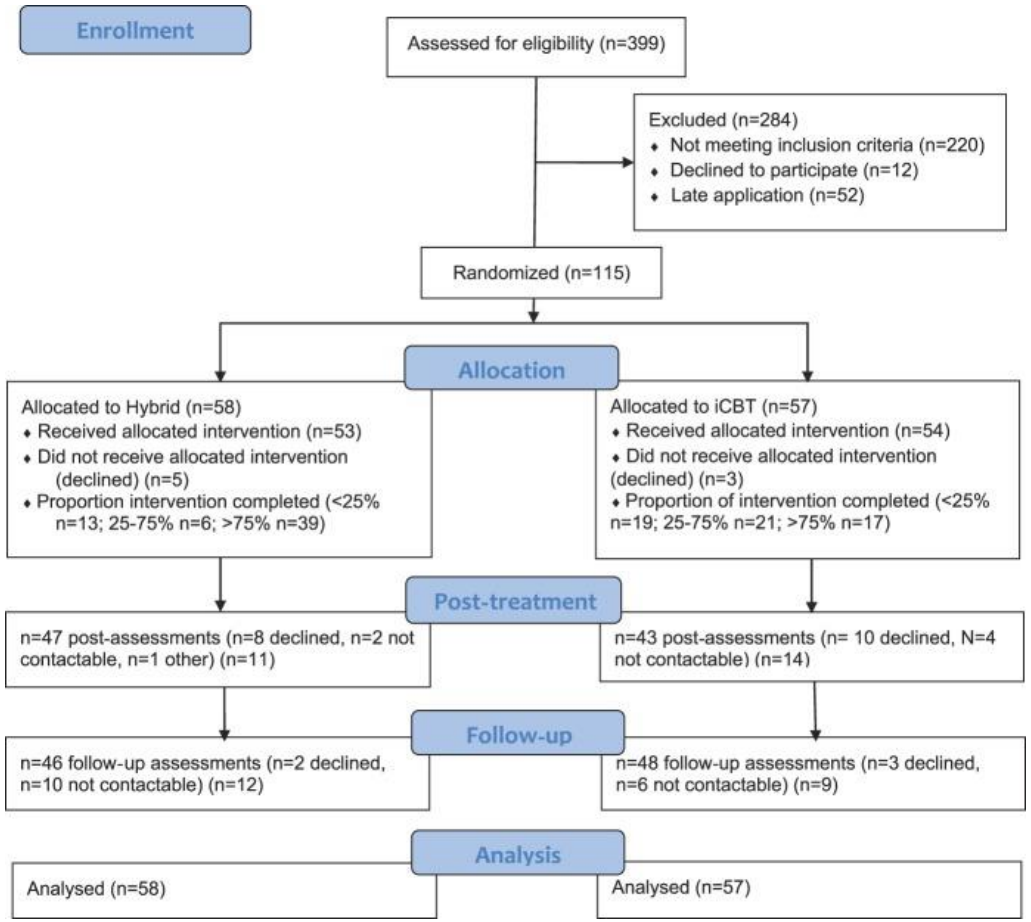
Role of DBT



Treatment stage	Typical methods
I. Building a working relationship, soothing distress, and developing relevant goals	Validation, self-monitoring and behavioural chain analyses, dialectic stance, metaphors and psychoeducation, goal setting, and valued commitment.
II. Developing skills to prepare for exposure and improve regulation of pain and emotion in everyday life	Psychoeducation, metaphors, dialectics, and skills training (self-validation, acceptance, breathing and relaxation techniques, distraction, refocusing, problem solving, and opposite action).
III. Exposure for emotions and movements	Exposure in vivo, behavioral experiments, generalize to home and work by practice.
IV. Training context sensitivity; applying skills in tune with environmental demands	Chain analyses and identifying relevant cues, rehearse context sensitive responses, implementing validation, communication, and emotion-regulation skills, coping with responses from others.
V. Maintaining and refining	Identifying key elements, strategies, and skills to cope with flare-ups.

Boersma, K., Södermark, M., Hesser, H., Flink, I. K., Gerdle, B., & Linton, S. J. (2019). Efficacy of a transdiagnostic emotion-focused exposure treatment for chronic pain patients with comorbid anxiety and depression: a randomized controlled trial. *Pain*, *160*(8), 1708–1718. https://doi.org/10.1097/j.pain.0000000000001575

Role of DBT

Measure	Pre-treatment to post-treatment		Pre-treatment to follow-up	
	Reliable improvement	Clinical significant improvement	Reliable improvement	Clinical significant improvement
MADRS-S				
Hybrid	18 (38%)	7 (15%)	19 (41%)	9 (20%)
iCBT	10 (23%)	3 (7%)	13 (27%)	6 (13%)
GAD-7				
Hybrid	12 (26%)	10 (22%)	16 (36%)	11 (24%)
iCBT	8 (19%)	7 (16%)	9 (20%)	7 (16%)
PCS				
Hybrid	11 (23%)	6 (13%)	16 (36%)	10 (22%)
iCBT	2 (5%)	1 (2%)	9 (20%)	7 (15%)
MPI-pain intensity				
Hybrid	9 (19%)	2 (4%)	5 (11%)	1 (2%)
iCBT	3 (7%)	1 (2%)	12 (25%)	2 (4%)
MPI-pain interference				
Hybrid	16 (34%)	5 (11%)	23 (50%)	9 (20%)
iCBT	5 (12%)	2 (5%)	14 (29%)	4 (8%)
On any measure				
Hybrid	34 (72%)	20 (43%)	33 (72%)	24 (52%)
iCBT	16 (37%)	10 (23%)	27 (56%)	17 (35%)

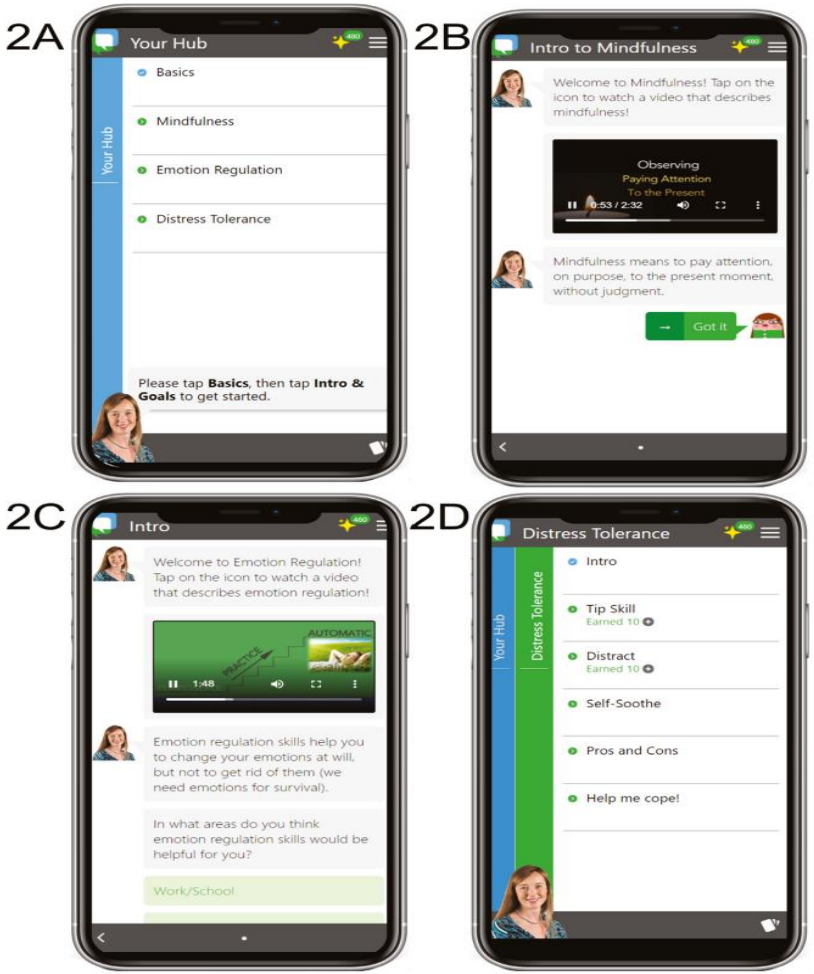
Pre-treatment to post-treatment: N for Hybrid = 47 (except for GAD-7 where N = 46), for iCBT, N = 43; pre-treatment to follow-up: N for Hybrid = 46, for iCBT, N = 48 (except for GAD-7 where N = 45 for both groups). GAD-7, Generalized Anxiety Disorder 7-item Scale; Hybrid, hybrid emotion–focused treatment; iCBT, Internet-delivered cognitive behavioral therapy; MADRS-S, Montgomery–Åsberg Depression Rating Scale; MPI, West Haven-Yale Multidimensional Pain Inventory; PCS, Pain Catastrophizing Scale.

Boersma, K., Södermark, M., Hesser, H., Flink, I. K., Gerdle, B., & Linton, S. J. (2019). Efficacy of a transdiagnostic emotion-focused exposure treatment for chronic pain patients with comorbid anxiety and depression: a randomized controlled trial. *Pain*, *160*(8), 1708–1718. https://doi.org/10.1097/j.pain.0000000000001575

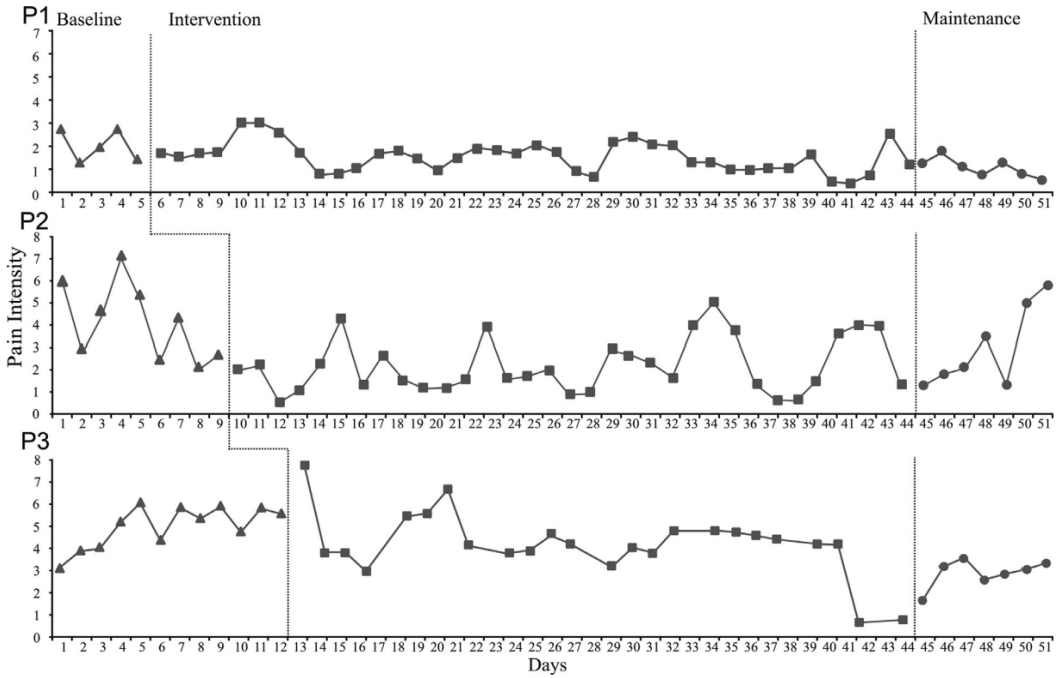
Role of DBT

USASP
US Association for the Study of Pain

iDBT-Pain app



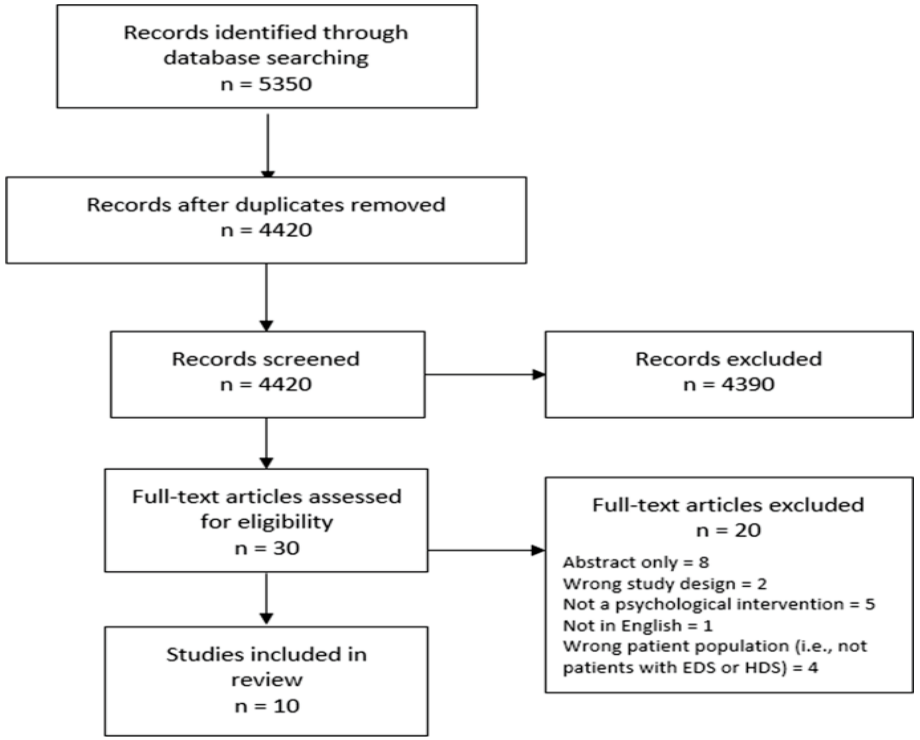
Each dot represents a mean daily measurement in pain intensity, measured in the morning, afternoon, and evening on the visual analogue scale (VAS).



The trial showed enough evidence to warrant further investigation

Norman-Nott, N., Wilks, C. R., Hesam-Shariati, N., Schroeder, J., Suh, J., Czerwinski, M., Briggs, N. E., Quidé, Y., McAuley, J., & Gustin, S. M. (2022). The No Worries Trial: Efficacy of Online Dialectical Behaviour Therapy Skills Training for Chronic Pain (iDBT-Pain) Using a Single Case Experimental Design. *The journal of pain*, *23*(4), 558–576. https://doi.org/10.1016/j.jpain.2021.10.003

Role of DBT



Researchers should investigate psychological interventions for individuals with all types of EDS/HSD with high-quality studies to validate findings from the existing studies

BMC Part of Springer Nature

OJRD Orphanet Journal of Rare Diseases

Psychological interventions for individuals with Ehlers-Danlos syndrome and hypermobility spectrum disorder: a scoping review

- Year- 2023
- N=258
- 4 studies- CBT techniques
- 1 study- DBT approach
- 2 studies- Psychoeducation
- 2 studies- Intensive interdisciplinary pain program (IIPT)
- 1 study- ACT approach

Song, J. Z., Luong, D., Feldman, E. C. H., Tran, S., Perrier, L., Eubanks, K., Bayley, M., Kastner, M., Slepian, M., & Munce, S. E. P. (2023). Psychological interventions for individuals with Ehlers-Danlos syndrome and hypermobility spectrum disorder: a scoping review. *Orphanet journal of rare diseases*, *18*(1), 254. https://doi.org/10.1186/s13023-023-02799-y

Conclusion

- Chronic Pain disorders impose heavy burden on existing health infrastructure
- Multi-speciality approach is warranted for management
- Role of Psychotherapy has been established- DBT based approach is showing promising future
- Need to consider DBT based approach in suitable patients

“It is much more important to know what sort of a patient has a disease than what sort of a disease a patient has”

-Sir William Osler

Thank You

References

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