

Multidimensional Pain Inventory – Interference Scale

Interference Scale

1. In general, how much does your pain interfere with your day-to-day activities?
2. Since the time your pain began, how much has your pain changed your ability to work?
3. How much has your pain changed the amount of satisfaction or enjoyment you get from taking part in social and recreational activities?
4. How much has your pain changed your ability to take part in recreational and other social activities?
5. How much has your pain changed the amount of satisfaction or enjoyment you get from family related activities?

Interference Scale

6. How much has your pain changed your relationship with your spouse, family, or significant other?
7. How much has your pain changed the amount of satisfaction or enjoyment you get from work?
8. How much has your pain changed your ability to do household chores?
9. How much has your pain changed your friendships with people other than your family?

Extraction Procedure

**MEDLINE (search terms: Multidisciplinary
Pain Inventory, MPI, Pain Inventory)**

EMBASE

PsychInfo

References in Articles

Personal Files

Yield from Extraction Procedure

of articles identified = 313

Abstracts reviewed by 2 raters

of Tx Outcome / Comparison Groups = 70

**# using Interference Scale and reporting
usable data = 14**

**# anchor based studies 7 but none included
sufficient data to permit determining MID
thus have to rely on distribution based
studies**

Distribution Based Criterion - English*

<u>Publication</u>	<u>Sample</u>	<u>N</u>	<u>½ SD</u>	<u>Semeas (.424)</u>
Rudy (1987)	Heterogeneous	500	.598	.507
Turk & Okifuji (1997)	Heterogeneous	445	.640	.543
Okifuji et al. (1999) 359	Heterogeneous (WC)		120	.423
Grant et al. (2000)	Heterogeneous (Com)	88	.680	.577
Bernstein et al. (1995)	Low Back Pain	94	.605	.513
Scharff et al. (1995) 462	Tension HA	59	.800	.678
	Migraine HA	132	.625	.530
	Combined HA	49	.630	.534
	Post Traumatic HA		34	.545
Turk et al. (1996)	FMS	183	.621	.527
Turk et al. (1998)	Metastatic CA	137	.629	.533
	Reg/Local CA	47	.553	.469
Greco et al. (2003) 649	SLE		<u>80</u>	<u>.765</u>
		2068	.618	

Distribution Based Criterion - Other*

<u>Publication</u>	<u>Sample</u>	<u>Country</u>	<u>N</u>	<u>½ SD</u>	<u>SEmeas</u>
Reitsma, & Meijler (1997)	Heterogeneous	Netherlands	404	.655	.555
Johannson et al. (1998)	Heterogeneous	Sweden	85	.600	.501
Bergstom et al. (1999)	Heterogeneous	Sweden			
	Females		129	.490	.416
	Males		106	.475	.403
Johannson & Lindberg (2000)	Heterogeneous	Sweden			
	Females		62	.550	.466
	Males		40	.650	.551
Thiema et al. (2003)	FMS	Germany	40	.960	.814
Widar & Ahlsrotm (1999)	Post Polio	Sweden	37	.650	.551
Carlson et al. (2000)	Burning Mouth	Sweden	33	.800	.678
			936	.605	

*Norman et al., Med Care 2003:41:582-592

Tx Outcome Studies

<u>Study</u>	<u>N</u>	<u>DX</u>	<u>Tx</u>	<u>Pre M/SD</u>	<u>½ SD</u>	<u>Post M/SD</u>	<u>Diff</u>
Kerns & Haythorn. (1988)	46	Heter	2	4.21 (0.87)	.435	4.01 (1.12)	-0.20
Nielson et al. (1992)	25	FMS	6	4.55 (0.74)	.352	3.85 (1.07)	-0.70
Flor & Birbaumer (1993)	26	BP/TMD	5	2.75 (1.23)	.615	1.73 (0.84)	-1.02
	26	BP/TMD	6	2.12 (1.13)	.565	1.71 (1.27)	-0.41
	26	BP/TMD	7	2.90 (1.29)	.645	2.03 (1.47)	-0.87
Rudy et al. (1995)	133	TMD	1	1.81 (1.29)	.645	0.69 (0.74)	-1.12
Turk et al. (1996)	20	TMD	1,8	2.56 (1.33)	.665	1.72 (1.36)	-0.84
	21	TMD	1, 6	2.32 (1.23)	.615	1.75 (1.08)	-0.57
Greco et al. (1997)			233 TMD	1	1.84 (1.37)	.685	0.79 (0.99)
							-1.05
Guck et al. (1999)	123	Heter	2	4.48 (0.98)	.490	3.02 (1.57)	-1.46

1 = Biof/Intraoral appliance/Stress Mgmt; 2 = Rehab; 3 = surgery; 4 = Exercise; 5 = Biof; 6 = CBT; 7 = Med Mgt; 8 = Support Counseling

Tx Outcome Studies

<u>Study</u>	<u>N</u>	<u>DX</u>	<u>Tx</u>	<u>Pre M/SD</u>	<u>½ SD</u>	<u>Post M/SD</u>	<u>Diff</u>		
McCarberg & Wolf (1999)	113	Heter	2	4.21 ---	---	3.62 (1.46)	-0.59		
Widmark & Carlsson (2000)	26	TMD	3	1.54 (1.13)	.630	1.08 (1.26)	-0.46		
Cipher et al. (2001)			16	6,7	4.97 (0.56)	.280	3.75		
			6	Heter	7	1.96 (1.97)	.985	5.19 (0.88)	+3.23
Marhold et al. (2001)	18	Heter*	6	4.20 (1.0)	.500	3.60 (1.10)	-0.60		
	18	Heter**	6	4.10 (0.70)	.350	3.10 (0.80)	-1.00		
		Heter*	7	4.4 (0.9)	.450	4.0 (1.00)	-0.40		
		Heter**	7	4.10 (0.90)	.450	3.30 (1.1)	-0.80		
Raja et al. (2002)	16	PHN	8	2.50 (1.70)	.850	2.30 (1.50)	-0.20		
	14	PHN	9	2.70 (1.70)	.850	2.50 (1.60)	-0.20		
Burns et al. (2003)	90	Heter	2	4.70 (1.10)	.550	3.70 (1.30)	-1.00		
Glenn & Burns (2003)	65	Heter	2	5.10 (0.80)	.400	4.00 (1.20)	-1.10		
	925				.583				

Summary

.5 SD 9 English Studies/N = **.618/2068**

.5 SD 7 Other Languages/N = **.605/936**

.5 SD 14 Tx Outcome Studies/N = .

583/925

Range **.280 - .985**

~~Average~~ MID = **.607**

1-.82 [reliability of Interference
Scale = .82]) used to calculate SEmeas = **.424**

Recommendation for Demonstrating a Minimally Important Difference

Since no anchor based studies have been published on the Interference Scale of the MPI, MID should be interpreted as either:

1. Change of .5 SD (.605-.618) or greater

or

2. Change of greater than the Standard Error of Measurement, SD baseline for sample X .424 (based on reliability of MPI Interference Scale = .82)

3. A 1 point change can be used for responder analyses.