

Prospective predictors of suicide risk in patients with chronic pain: An investigation into the role of mental defeat

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INTRODUCTION

- Risk of death by suicide is doubled in people with chronic pain compared to pain-free individuals¹.
- Various studies have shown an association between mental defeat and levels of distress and disability in chronic pain².
- Mental defeat is defined as a disabling type of self-processing where repeated episodes of pain trigger negative beliefs about the self³.
- Crucially, the level of mental defeat has been featured as a key precipitating factor of suicide, even when co-morbid depression is accounted for^{4,5,6}.
- This study examined the prospective association of mental defeat with future suicide risk⁷.

METHODS

- Participants completed an online screening and self-report questionnaires assessing suicidal behaviour, sociodemographic and psychological variables, and activity patterns at 0, 6, and 12 months.
- Weighted regression models were run with all predictor (demographic/psychological/ pain/activity) variables and SBQ-R at 6 and 12 months as outcome variables.
- A weighted multivariate model was constructed by adding only factors that were observed to be significant predictors in the logistic regression model.

Table 1. Measures

Demographics	Psychological variables
<ul style="list-style-type: none"> • Age • Gender • Ethnicity • Education • Employment status • Body Mass Index • Smoking & Alcohol use 	<ul style="list-style-type: none"> • Mental defeat (PSPS) • Pain catastrophising (PCS) • Pain self-efficacy (PSEQ) • Anxiety & Depression (HADS) • Perceived Stress (PSS) • Fear of movement (TSK) • Pain Vigilance (PVAQ)
Pain variables	Activity patterns
<ul style="list-style-type: none"> • Intensity (BPI) • Interference (BPI) • Widespread pain • Pain location • Duration (years) & location 	<ul style="list-style-type: none"> • Insomnia (ISI) • Social activity (SAL) • Physical activity (IPAQ) • Patterns of activity (POAM-P)
Suicidal behaviour (SBQ-R) (4-items)	
<ul style="list-style-type: none"> 1- Lifetime suicide ideation 2- Frequency of ideation (past 12 months) 3- Threat of suicidal behaviour 4- Self-reported likelihood of suicidal behaviour 	

PARTICIPANTS

- 521 adults with chronic pain completed an online questionnaire at 0-month.
- A subset of 367 adults (70.4%) repeated the questionnaire at 6-months and 340 adults (64.5%) at 12 months.

Table 2. Demographics	0m
Age (yrs), mean (SD)	39.9 (12.3)
Female, n (%)	419 (80.4)
White ethnic group, n (%)	469 (90.0)
Lower education, n (%)	60 (11.5)
Not working, n (%)	174 (33.4)
BMI, mean (SD)	29 (8.0)
Current vaper/smoker, n (%)	95 (18.23)
Freq. alcohol use, n (%)	71 (13.63)
Pain duration (yrs), mean (SD)	10.1 (8.31)
Pain intensity, mean (SD)	4.6 (1.8)
Pain interference, mean (SD)	5.36 (2.0)
Widespread pain (y/n)	158 (30.3)
>1 pain location, n (%)	390 (74.9)

RESULTS

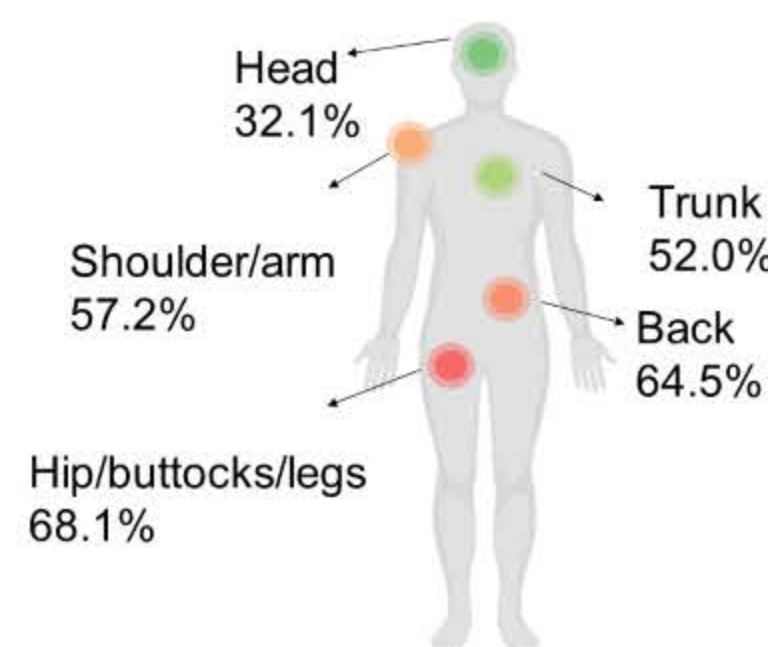


Figure 1. Pain locations

Table 3. Prevalence of high suicide risk

	0m (n=521)	6m (n=367)	12m (n=340)	At both 0 & 6m	At all time-points
SBQ-R total score	6.38 (3.64)	6.18 (3.50)	6.25 (3.75)		
High suicide risk (≥7 on SBQ-R)	38.8% (n=202)	36.2% (n=133)	36.5% (n=124)	28.1% (n=103)	22.9% (n=78)

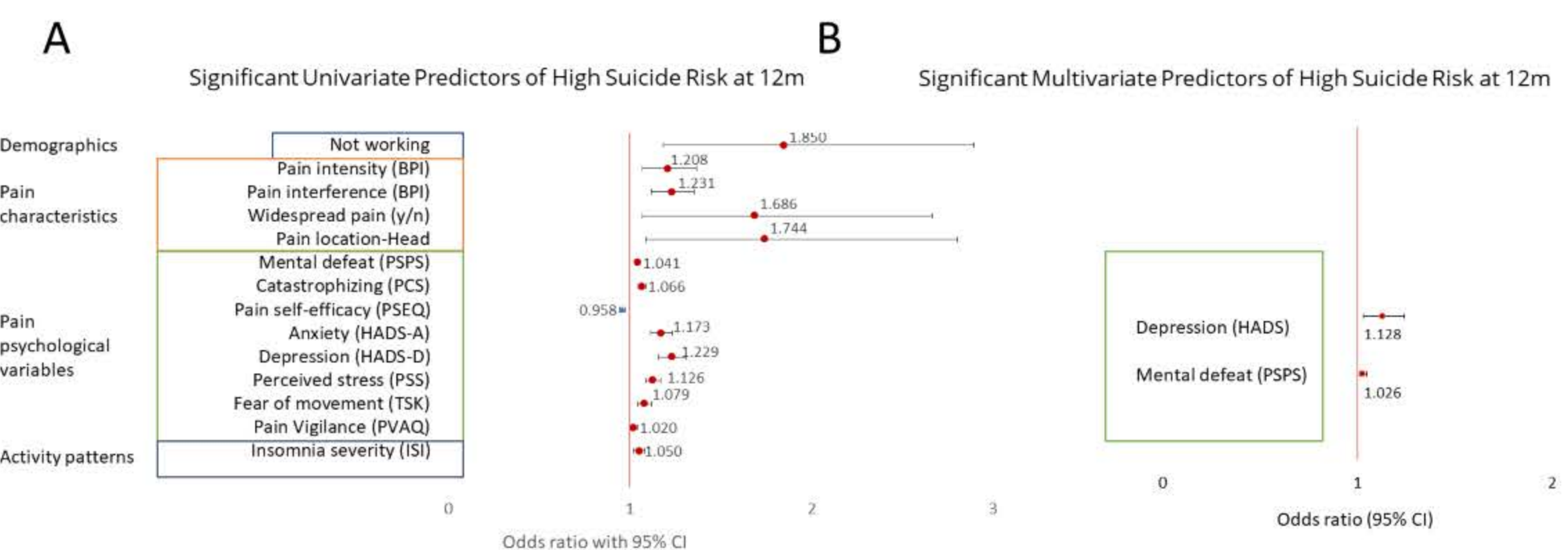


Figure 2. Forest plot of weighted univariate and multivariate analysis for predictors associated with suicidal behaviors at 12-month. (A) Univariate analysis showing only significant univariate predictors p<.05 (B) Multivariate analysis showing only significant predictors p<.05. Blue triangles represent protective factors, red dots represent risk factors. Significant multivariate predictors of high suicide risk at the 6-month mark included younger age, non-white ethnicity, and smoking status in addition to mental defeat and depression.

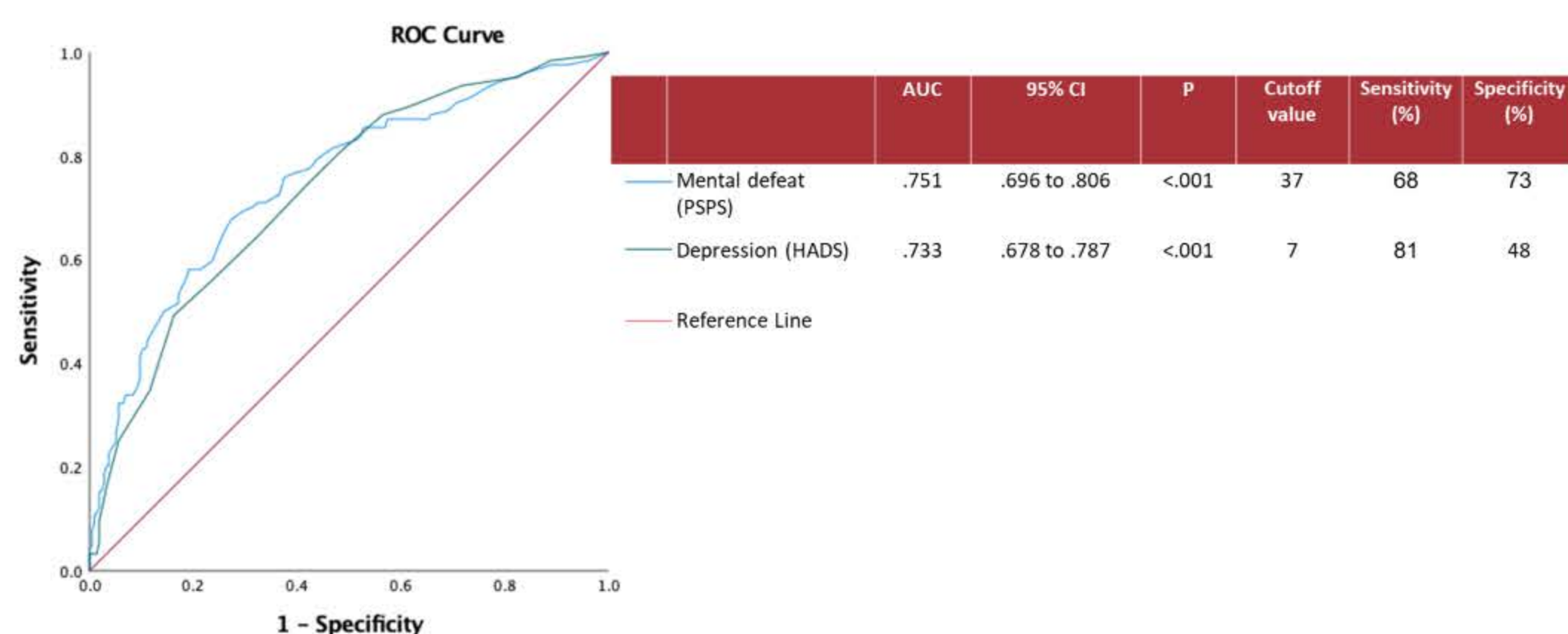


Figure 3. ROC predicting suicide risk at 12m by mental defeat, perceived stress & depression at 0m

CONCLUSIONS

- Individuals with chronic pain are at elevated risk of suicidality.
- Multivariate modelling revealed that **mental defeat** and **depression** significantly increased the odds of **reporting higher suicidal behaviour scores after 12-month**.
- A cut-off score of 37 for PSPS and 7 for HADS demonstrated an acceptable ability to predict participant classification with SBQ-R scores ≥ 7 meaning high suicide risk.
- Psychosocial risk factors, such as mental defeat, add to generic demographics and pain-specific risk factors in predicting clinical suicide risk and may offer a novel avenue for assessment and preventative intervention.