| First Author, year of publication, country | study design | objective | patient's characteristics (number, age, gender, BMI) | the operation (knee or hip- total or hemi) | personality traits questionnaire | length of follow-up | outcomes following arthroplasty | the results with significant p value |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Turan,2023, Turkey | prospective cross-sectional | to investigate the relationship between pain severity early preoperative and post-operative with psychometric factors such as personality traits | 50, 64.80+-8.7, male=10%, 33.97+-6 | total knee arthroplasty | Eysenck personality questionnaire revised abbreviated | 48 hours after operation  2nd, 4th, 8th, 12th, 24th, and 48th hours after the operation | The primary outcome measures were pain intensity, assessed using the Visual Analogue Scale (VAS), both at rest (static) and during exercise (dynamic), at various time points post-surgery.  The study also examined the following psychometric factors as predictors: - Depression, measured by the Beck Depression Inventory (BDI) - Anxiety, measured by the Beck Anxiety Inventory (BAI) - Somatic symptom amplification, measured by the Somatosensory Amplification Scale (SAS) - Alexithymia, measured by the Toronto Alexithymia Scale (TAS) - Personality traits, measured by the Eysenck Personality Questionnaire Revised-Abbreviated (EPQR-A), which assesses extraversion, psychoticism, neuroticism, and lie subscales | VAS-Static Scores:  The mean VAS-Static scores showed a statistically significant change over time (F = 40.40, p < 0.001).  - the psychometric properties, including Extraversion, Lie, Neuroticism, Psychoticism, TAS, BDI, BAI, and SAS, were not found to have a statistically significant effect on the change in VAS-Static scores due to the non-homogeneous distribution of the data.  - When the effects of these psychometric properties were controlled, the change in VAS-Static scores was still not statistically significant (F = 1.66, p = 0.119).  VAS-Dynamic Scores:  - The mean VAS-Dynamic scores also showed a statistically significant change over time (F = 79.19, p < 0.001).  - Only the psychoticism subscale of the EPQR-A was found to have a statistically significant effect on the change in VAS-Dynamic scores (F = 2.39, p = 0.040), with an effect size of approximately 5.5%.  - When all psychometric properties were controlled, the significant change in VAS-Dynamic scores continued (F = 2.95, p = 0.014), but the effect size decreased from 61.8% to 6.7%.  - Other Psychometric Factors: The study concluded that preoperative anxiety, depression, somatosensory amplification, alexithymia, and personality traits, other than psychoticism, did not affect pain in the first 48 hours postoperatively. |
| Moghtadaei, 2020, Iran | prospective cross-sectional | to investigate the effect of psychological status, physical ,and mental health on total knee arthroplasty outcomes | 52, 67.19+-7.68, male= 26.9%, not mentioned | total knee arthroplasty | Eysenck personality inventory | 2 weeks, 1 month, 3 months, 6 months, 12 months | Health-Related Quality of Life (HRQL): This was measured using the 12-item Short Form Health Survey (SF-12), which provides a physical component summary (PCS) and a mental component summary (MCS)  Functional Status: This was assessed using the Knee Injury and Osteoarthritis Outcome Score (KOOS), which includes subscales for pain, other symptoms, function in daily living, function in sport and recreation, and knee-related quality of life  Range of Motion (ROM)  Psychological Factors | Health-Related Quality of Life (HRQL) - Both the SF-12 scores and its PCS and MCS subscores showed a significant increase after TKA - Postoperative SF-12, MCS, and KOOS scores were significantly greater in men than women - Patients with high school or university degrees had significantly greater improvements in SF-12 scores  Functional Status: - KOOS scores significantly improved after TKA - KOOS scores were significantly greater in men than women - Patients with high school or university degrees had significantly greater improvements in KOOS scores  Range of motion: - The postoperative ROM was not significantly different among patients with different educational levels, personality types, and sex  Psychological factors: - OHI scores were directly correlated with postoperative SF-12, PCS, MCS, and KOOS. Patients with less depressive symptoms had greater improvement in mental health (Pearson correlation coefficient = 0.506, p < 0.001) - Extroversion and neuroticism did not have significant correlation with subjective well-being, HRQL, and function before and after surgery - Depression was identified as the only independent predictor of physical, mental, and functional outcomes (p < 0.001). Patients with less depressive symptoms and higher baseline mental and physical scores had significantly greater improvement in HRQL after surgery  Correlations: - Preoperative OHI scores were strongly and directly correlated with postoperative SF-12, PCS, MCS, and KOOS (p < 0.01). - Preoperative SF-12, PCS, and MCS were correlated strongly and directly with postoperative SF-12, PCS, MCS, and KOOS (p < 0.01). - Preoperative KOOS scores only had a significant direct correlation with postoperative KOOS (p < 0.05). - Extroversion had a direct, but not significant correlation with pre- and post-operative SF-12, MCS, and PCS, and postoperative KOOS. - Neuroticism had an inverse, but not significant correlation with pre- and postoperative SF-12, PCS, MCS, and KOOS.  Regression Analysis: - After applying regression analysis, the only independent predictor for postoperative function and HRQL (postoperative SF-12 and KOOS) was OHI (p < 0.001). |
| Dadi, 2020, China | retrospective case study | to investigate the effect of personality traits on subjected outcomes of total knee arthroplasty. | 108, 67.23±7.24 in satisfaction group, 68.15±5.49 in dissatisfied group, male=64/18 satisfied, 20/6 dissastified in all groups, BMI: 26.24±4.10 in satisfaction group, 26.24+- 3.59 in dissatisfied group. | total knee arthroplasty | chinese version of Eysenck Personality Questionnaire Short Form EPQ-RSCT | minimum 1 year annualy and 20 years totally follow-up | Patient Satisfaction: Satisfaction was assessed by asking patients a simple yes/no question about whether they were satisfied with their total knee replacement surgery  Knee-Specific Measurements:  Hospital for Special Surgery (HSS) Knee Score, the Knee Society Score (clinical and functional), and a visual analog scale (VAS) for pain | Overall, 76% of patients were satisfied, and 24% were not satisfied. - The study found a significant association between personality type and satisfaction. - "Extroverted-stable" personality type had the highest satisfaction rate, with 93% satisfied and 7% dissatisfied. - "Extroverted-unstable" type had 40% satisfied and 60% dissatisfied. - "Introverted-stable" type had 87% satisfied and 13% dissatisfied. - "Introverted-unstable" type had 47% satisfied and 53% dissatisfied. - The differences between these groups was statistically significant (P < 0.05).  American Hospital for Special Surgery (HSS) Knee Score:  - The HSS score was significantly higher in the satisfied group than in the unsatisfied group (P < 0.05). - The mean HSS score in the satisfied group was 83.99 ± 5.86, and in the unsatisfied group, it was 79.88 ± 5.94. - Pre-operatively, the HSS score was also significantly higher in the satisfied group (49.79 ± 12.28) than the unsatisfied group (43.42 ± 15.67), with a P value <0.05  - no statistically significant difference between the satisfied and unsatisfied groups in either the clinical or functional scores at one year post-op (P > 0.05)  - The VAS pain score was significantly lower in the satisfied group than in the unsatisfied group at one year post-op (P < 0.05). - The mean VAS pain score was 0.71 ± 0.73 in the satisfied group and 3.62 ± 1.60 in the unsatisfied group. - Pre-operatively, the VAS scores were similar between the satisfied and unsatisfied groups (P > 0.05)  - Personality type and post-operative pain were identified as independent risk factors affecting patient satisfaction. - The odds ratio for personality type was 0.03 (0.01-0.67) with a P value < 0.05. - The odds ratio for post-operative pain was 0.14 (0.05-0.38) with a P value < 0.05 |
| Benditz, 2017, Germany | prospective observational study | to investigate the relationship between depression, resilience,   state and trait anxiety, and different personality traits and   the healing process and early functional outcome measured  by means of the HHS. | 50,62.18±11.48,male=46%,27.95±5.44 | total hip arthroplasty | “Allgemeine Depressionsskala” (general depression scale – long, ADS-L) “State and Trait Anxiety Inventory” (STAI)  “Resilience Scale” (RS-11) Freiburg Personality Inventory – revised (FPI-R) | 1 week, 5 weeks | Depression: Measured using the "Allgemeine Depressionsskala" (ADS-L) state and trait anxiety resilience FPI-scores HHS | The HHS showed a significant improvement over time. The mean HHS was 49.6 ± 19.8 preoperatively (T0), 60.0 ± 13.9 at 1 week (T1), and 73.3 ± 8.8 at 5 weeks (T2).  The study found that patients with lower depression levels had significantly better hip functionality at all measurement points. The effect of depression on HHS was significant at all three measurement times: - T0: F(1,48) = 6.146, P = 0.017, η² = 0.114 - T1: F(1,48) = 6.570, P = 0.014, η² = 0.120 - T2: F(1,48) = 7.017, P = 0.011, η² = 0.128  The mean ADS-L score was 16.8 ± 8.8 at T0, 17.6 ± 9.3 at T1, and 11.9 ± 6.2 at T2. Depression levels significantly decreased within the 5-week period in the clinic and rehabilitation center.  The mean STAI-X1 score was 44.1 ± 12.3 at T0, 38.9 ± 11.0 at T1, and 35.1 ± 10.2 at T2. State anxiety levels significantly decreased within the 5-week stay   Trait anxiety was measured only at baseline (T0) and the mean score was 38.7 ± 9.9. The study found a significant effect of trait anxiety on hip functionality at 1 week after surgery (T1: F(1,48) = 9.900, P = 0.003, η² = 0.171).  The mean RS-11 score was constant throughout the study with 59.9 ± 11.0 at T0, 59.3 ± 11.1 at T1, and 59.7 ± 11.0 at T2. Resilience was not significantly related to hip functionality  There was a significant correlation between somatic pain and HHS at T1 (r = -0.451, P = 0.001). However, other personality traits were not significantly related to hip functionality |
| Feeney, 2001, United States of America | cross-sectional | investigating the relationship between negative affect(depression, state anxiety, trait anxiety, state anger, and trait anger) and  acute pain in an elderly population | 100, 78.55+-5.75, male=33%, not mentioned. | orthopedic surgeries including hip or knee replacement | State-Trait Anger Expression Inventory, State-Trait Anxiety Inventory | N/A | The primary outcome was the experience of pain, as measured by the Total Pain Rating Index (TPRI) of the McGill Pain Questionnaire (MPQ). The study also assessed the following as predictor variables: state anxiety, trait anxiety, depression, state anger, and trait anger | State Anxiety and Pain: State anxiety was the only significant predictor of pain in this study population. It was found that state anxiety alone accounted for 27% of the variance in pain. The correlation between state anxiety and pain was r = .52 with a p-value of <.001. The standardized regression coefficient (beta weight) for state anxiety was .67, with a p-value of <.0001. State anxiety accounted for approximately 18% of the variability in total pain, beyond the variance accounted for by the other four predictors, with F(1,94) = 25.86, p < .0001.  Depression and Pain: Although depression was significantly correlated with pain, it was not a significant independent predictor of pain in the multiple regression analysis. The correlation between depression and pain was r = .32 with a p-value of <.001. The unique contribution of depression to the prediction of pain was very low, contributing only .2% of the variance.  Trait Anxiety, State Anger, and Trait Anger: These variables were not significantly related to pain in this study population. Correlations between pain and trait anxiety, state anger, and trait anger were all non-significant with r = .16, .12, and .21, respectively.  Overall Model: The model containing state anxiety, trait anxiety, depression, state anger, and trait anger, accounted for 30.8% of the variance in total pain, with F(5,94) = 8.38, p < .0001. However, when state anxiety was considered alone, it accounted for 27.01% of the variance. |
| Badura-Brzoza, 2009, Poland | prospective cross-sectional | to assess some psychological and  psychiatric factors like anxiety, depression, sense of coherence  and some traits of personality and the influence of those  factors upon postoperative health-related quality of life in  patients undergoing total hip replacement. | 102, 61, male=42.15%, not mentioned | Total hip arthroplasty | Eysenck  Personality Inventory | 2weeks before and 6 months after surgery | Depression Anxiety Sense of coherence (SOC) Personality traits Health-Related Quality of Life (HRQoL) | depriosn: The mean BDI score was significantly higher before surgery (15.86) than after surgery (10.32). This difference was statistically significant (p = 0.003) - State anxiety (STAI-X1) was significantly higher before surgery (mean 47.9) than after surgery (mean 41.1), with a p-value of 0.010. - Trait anxiety (STAI-X2) was measured only before surgery, with a mean score of 46.5. - SOC was measured only before surgery, and the mean value was 132.03.  - Postoperative values of the Physical Component Summary (PCS) and Mental Component Summary (MCS) of the SF-36 questionnaire correlated negatively with SOC values (p = 0.04 and p = 0.03 respectively). This indicates that lower sense of coherence is associated with greater disability. - Neuroticism (N) was negatively associated with postoperative functioning in both mental (p = 0.03) and physical dimensions (p = 0.005). - Extroversion (E) and the lie scale (L) were measured only before surgery - PCS and MCS values were significantly improved post-surgery (p < 0.001 and p=0.03, respectively).  - SOC significantly correlated with post-operative PCS (p=0.04) and MCS (p=0.03). - Trait anxiety (STAI-X2) significantly correlated with post-operative PCS (p=0.04) and MCS (p=0.008) - Neuroticism (N) significantly correlated with post-operative PCS (p=0.005) and MCS (p=0.03) |
| Singh, 2010, United States of America | retrospective cohort | to  assess whether an explanatory style is independently associated with self-reported (1) pain, (2) limitations in activities after follow-up at two and five years post-primary or  post-revision TKR and (3) time to revision or re-operation  in patients with primary TKR. | 783,68.8+-9.7, male = 38.3%, not mentioned directly the percentage of BMIs were listed. | primary or revision total knee replacement | Minnesota Multiphasic Personality Inventory | 2 years and 5 years. | Pain Improvements in knee function Activity limitations implant survival | At two years post-primary TKR, pessimists reported significantly more moderate or severe pain compared to non-pessimists. The odds ratio (OR) was 2.21 (95% CI 1.12 to 4.35, p = 0.02)  At two years post-primary TKR, pessimists reported significantly less improvement in knee function compared to non-pessimists. The odds ratio was 0.53 (95% CI 0.30 to 0.96, p = 0.04)   there was no significant difference in moderate or severe activity limitation between pessimists and non-pessimists. The odds ratio was 1.01 (95% CI 0.62 to 1.66, p = 0.97)  There was no statistically significant association between pessimism and the risk of revision after primary TKR. The hazard ratio was 0.8 (95% CI 0.39 to 1.64, p = 0.55) |
| Ramaesh, 2013, England | prospective cohort | to investigate the relationship between personality and joint-specific function, general physical and general mental health in patients undergoing THA and TKA. | 184 in THA / 205 in TKA,67.1 tha / 70.5 tka, 45% tha / 42% tka, not mentioned | 168 (91 %) THA patients and 190 (93 %) TKA | Eysneck Personality Questionnaire, brief version | one year | Joint-specific function: Measured using the Oxford hip or knee score General health: Measured using the EuroQol (EQ-5D) | Pre-operatively, in patients with hip arthrosis, the "unstable introvert" personality type was associated with lower joint-specific function (p < 0.001). In patients with knee arthrosis, there was no independent effect of personality on pre-operative joint function. Post-operatively, in both THA and TKA groups, the main predictor of joint-specific function was pre-operative function, and comorbidity was also a significant predictor. Personality was not an independent predictor of outcome  Pre-operatively, in patients with hip arthrosis, the "unstable introvert" personality type was associated with lower general health (p < 0.001). In patients with knee arthrosis, the "stable extrovert" (p=0.023) and "unstable introvert" personality types (p=0.003) were associated with poorer general health. Post-operatively, general health outcomes were predicted by pre-operative function and comorbidity, and there was no independent effect of personality type.  Following THA, there was no significant difference in satisfaction across personality types (p = 0.453), and expectations were similarly met across personality types (p = 0.356). Following TKA, there was a significant difference in reported satisfaction across personality types (p = 0.026), with the "unstable introvert" group reporting the least satisfaction. There was no difference in reported rates of whether surgery met expectations (p = 0.102)  The mean pre-operative Oxford score was 21.0 for the THA group and 19.4 for the TKA group. The mean Oxford score one year post-operative was 38.4 for the THA group and 35.2 for the TKA group. There was a significant difference in the change in Oxford score between the two groups (17.4 for THA and 15.8 for TKA; p=0.001)  The mean pre-operative EQ-5D score was 0.41 for the THA group and 0.37 for the TKA group. The mean EQ-5D score one year post-operative was 0.72 for the THA group and 0.67 for the TKA group. There was a significant difference in the EQ-5D score between the two groups one year post-operative (p=0.043) |
| Mercurio, 2020 Italy | prospective cross-sectional | to assess the role of personality traits, anxiety, and depression in residual pain among patients who underwent total hip (THA) and knee (TKA) arthroplasty | 83 total / 40 tha / 43 tka, 67.67 +-10.6 / 65.6+-10.6 tha / 69.6+-7.8 tka,male=44.57%/22.55%tha/15.35%tka, in TKA,32.3 +-5.7, in THA 27.8 +- 4.8 | 43 Total knee arthroplasty or 40 Total hip arthroplasty | revised Temperament and Character Inventory | ,preoperative,5 days, and 1, 3, 6 and 12 month | Pain Functionality Quality of life psychological factors | pain - Significant reductions in pain were reported at the 12-month follow-up (t5) in both THA and TKA patients (p < 0.001). - There were no significant differences in pain (VAS scores) between THA and TKA patients at t5. - Residual pain (VAS > 30 mm) at t5 was noted in 15% of THA patients and 25% of TKA patients, with no statistically significant difference between the two groups (p = 0.233). - Residual pain was correlated with SF-12 PCS (r2 = -0.412; p < 0.001), SF-12 MCS (r2 = -0.473; p < 0.001), HADS-A (r2 = 0.619; p < 0.001), HADS-D (r2 = 0.559; p < 0.001), functionality (r2 = -0.482; p < 0.001) and WOMAC scores (r2 = 0.536; p < 0.001) at t5.  Functionality: - Significant functional improvement was reported at t5 in both THA and TKA patients (p < 0.001). - THA patients showed earlier and greater functional improvement after surgery compared to TKA patients (p < 0.001). - The largest amounts of variation were found in the functional scores (HHS=142.7% and KSS=182.5%)   Quality of Life: - A significant time effect with a large effect size (ƞ2 > 0.5) was noted for all variables except for the SF-12 MCS score (ƞ2 = 0.12). - Larger differences between pre- and post-operative scores at t5 were noted for the WOMAC score (THA = 80.5% vs TKA = 70.2%; p = 0.009) and SF-12 PCS score (THA = 57.4% vs TKA = 30.7%; p = 0.013)  psychological factors - Higher pre-operative harm avoidance, persistence, and anxiety scores were predictive of residual pain after both THA and TKA (p < 0.001). The logistic regression analysis showed that harm avoidance (p=0.034), persistence (p=0.003), and HADS-A scores (p=0.024) were significant predictors of residual pain. - There was a significant time effect noted for anxiety and depression scores, with improvement over time (p < 0.001). The effect size was ƞ2 = 0.582 for anxiety, and ƞ2 = 0.377 for depression. |
| Túlia Ferrer, 2019, Spain | prospective cross-sectional | To evaluate if presence of some psychiatric disorders or personality traits could be the main cause for the worse outcome of total knee arthroplasty in patients with allergies | n=209 , age=72.84 (SD 8.32), male= 33%, BMI= 31.37 (SD 4.67) | total knee arthroplasty | reduced NEO Inventory of Five-Factor (NEO-FFI) | preoperative and 6 months after the operation | WOMAC total  WOMAC pain WOMAC function KSS SF-12 Anxiaty (STAI-X) | \* The significance of the difference in the outcomes scores in the group with allergies was lost after adjusting for anxiety (p > 0.05) \* The State-Trait Anxiety Inventory (STAI-T) showed that anxiety was more prevalent in the group of patients with self-reported allergies (19.18 points) compared to the no allergy group (24.08 points), with a p-value of 0.039. \* No significant differences were observed between the two groups for other psychiatric disorders assessed using the NEO-FFI (for neuroticism, extraversion, agreeableness, openness to experience, and conscientiousness), PHQ-15, PCS (total, rumination, magnification, helplessness), and RDQ  - At 6 months follow up, the WOMAC total score improved less in the allergy group (34.37 points) compared to the no allergy group (40.10 points), with a p-value of 0.023. - The WOMAC pain score also improved less in the allergy group (6.03 points) compared to the no allergy group (7.50 points), with a p-value of 0.018 - the WOMAC function score improved less in the allergy group (22.97 points) compared to the no allergy group (27.24 points), with a p-value of 0.023 - The KSS-knee score improved less in the allergy group (25.37 points) than in the no allergy group (33.79 points), with a p-value of 0.002 - The SF-12 physical score also showed less improvement in the allergy group (7.89 points) compared to the no allergy group (11.15 points), with a p-value of 0.046 |
| Giurea, 2016, Austria | prospective clinical controlled study | to investigate if personality traits have an impact on patient’s satisfaction and clinical outcome after navigated Total knee artroplasty | n=80 ,mean age=66 , gender= 40%male ,NA | total knee arthroplasty | Freiburg Personality Inventory (FPI-R) | Minimum follow-up period was two years | patient satisfaction VAS, WOMAC, Knee clinical score KSS, Function score KSS, ROM and Stability was used in order to measure satisfaction and dissatisfaction following operation | satisfation: 84% (72 patients) of patients reported being satisfied with their TKA, while 16% (14 patients) were dissatisfied. - Satisfied patients had a significantly lower mean VAS score (1.1 ± 1.5) compared to dissatisfied patients (6.7 ± 1.8) with a p-value of <0.001 - Satisfied patients had a significantly lower mean WOMAC score (0.86 ± 1.3) compared to dissatisfied patients (5.76 ± 2.2) with a p-value of <0.001 - Satisfied patients had significantly better KSS scores (92 ± 13) compared to dissatisfied patients (65 ± 17), with a p-value of <0.001 - Satisfied patients had significantly better function scores (88 ± 16) co- mpared to dissatisfied patients (59 ± 22), with a p-value of <0.001 - There was no significant difference in ROM between satisfied (118° ± 11.4) and dissatisfied patients (117° ± 18.3), with a p-value of 0.262  Personality Traits: - Life satisfaction: Satisfied patients showed significantly higher scores (9.5 ± 2.3) for life satisfaction compared to dissatisfied patients (7.4 ± 3.3) with a p-value of 0.006. - Performance orientation: Satisfied patients showed significantly higher scores (8.3 ± 2.5) for performance orientation compared to dissatisfied patients (6.5 ± 2.7) with a p-value of 0.015. - Somatic distress: Dissatisfied patients showed significantly higher scores (6.1 ± 3.2) for somatic distress compared to satisfied patients (3.4 ± 2.5) with a p-value of 0.001. - Emotional stability: Dissatisfied patients showed significantly higher scores (7.6 ± 4) for emotional instability compared to satisfied patients (4.4 ± 3.3) with a p-value of 0.002. - No significant differences were found in the other personality traits measured by the FPI-R. |
| Qi, 2016, China | prospective cross-sectional | to determine whether psychological factors affect health-related quality of life (HRQL) and recovery of knee function in total knee replacement (TKR) patients | n=119, age=mean 62.1±10.12 , gender=38 male, BMI not mentioned | total knee arthroplasty | Eysenck Personality Questionnairerevised (EPQR-S) | 1 week before surgery + 1 and 6 months after surgery | STAI Beck Anxiety inventory Beck depression inventory The Knee Society Score (KSS),  The Short-Form Health Survey questionnaire (SF-36) are affected by negative emotions, including neuroticism, anxiety, and depression | knee function 6 months after surgery(KSS) was negatively associated with trait anxiety inventory and neuroticism(both P<0.05), but positively associated with extraversion(P<0.05). Preoperative PhysicalComponent Summary Scale (PCS) and Mental Component Summary Scale (MCS) scores were negatively associated with extraversion (E score) (B=–0.986 and –0.967, respectively, both P<0.05). Postoperative PCS and State Anxiety Inventory (SAI) scores were negatively associated with neuroticism (N score; B=–0.137 and –0.991, respectively, both P<0.05) Postoperative MCS, SAI, Trait Anxiety Inventory (TAI), and BAI scores were also negatively associated with the N score (B=–0.367, –0.107, –0.281, and –0.851, respectively, all P<0.05). |
| Gong, 2014, China | retrospective study | to explore the relationship between diverse types of personality and results after TKA, and how the characteristics of each personality type impact recovery | n=387, age=59.6 +- 7.2 , male=28.37%, BMI=27.8 +- 4.6 | total knee arthroplasty | Eysenck Personality Questionnaire (EPQ) | 1 week before to 6 months after surgery | SF-36 and WOMAC were measured and there was statistically significant positive relationship between outcome scores and extraversion level + a negative relationship between outcome scores—especially SF-36 MCS and WOMAC pain scores—and neuroticism level | - Sanguine personalities had the best functional outcomes, and melancholic personalities had the worst functional outcomes. - The difference in SF-36 scores between the four personality types was significant (p < 0.0001 for PCS and MCS).  -There was a statistically significant negative association between extraversion and WOMAC scores and a significant positive association between neuroticism and WOMAC scores - The difference in WOMAC scores between the four personality types was significant (p = 0.0002 for pain, p = 0.0289 for stiffness, and p = 0.0058 for function)  SF-36 PCS and Extraversion 0.62 correlation p=0.040 SF-36 MCS and neuroticism -0.62 correlation p=0.018 WOMAC pain Extraversion -0.64 correlation p=0.018 WOMAC pain neuroticism -0.71 correlation p=0.025.  Patient Satisfaction: - Overall patient satisfaction was assessed using a 100-mm visual analog scale (VAS). - Satisfaction rate showed a significant difference between the four personality types. - The percentage of sanguine patients was the highest, and the percentage of choleric patients was the lowest. |
| Chao Chen, 2021, china | retrospective cohort study | To assess the clinical benefit and compare the cost-effectiveness of total knee arthroplasty (TKA) in patients with different personality traits. | n=211. age=62.95,male=49.76% , bmi=26.99  age: Choleric group: 62.3 (5.3) Sanguine group: 61.8 (6.1) Melancholic group: 60.4 (5.7) Phlegmatic group: 63.2 (5.5)  BMI: Choleric group: 27.1 (3.1) Sanguine group: 26.8 (2.8) Melancholic group: 27.2 (3.2) Phlegmatic group: 27.0 (3.0) | Total Knee Arthroplasty | Eysenck Personality Questionnaire (EPQ) | average 24.6 months postoperatively | costeffectiveness ratio (MCER),  quality-adjusted life years (QALYs),  McMaster Universities Osteoarthritis Index were measured (WOMAC) questionnaire,  EPQ | Rheumatoid arthritis (RA) was significantly associated with a higher MCER (adjusted OR = 1.3, 95% CI = 1.2–1.4, P < 0.01). American Society of Anesthesiologists (ASA) Class I-II was significantly associated with a lower MCER (adjusted OR = 0.9, 95% CI = 0.8–1.0, P < 0.001).  QALY There was a statistically significant difference in QALYs among the different personality traits (P < 0.05). The sanguine group had the highest QALYs, with a mean of 6.9 (SD 1.3), while the melancholic group had the lowest QALYs, with a mean of 5.0 (SD 1.2).  WOMAC There was a statistically significant difference in postoperative WOMAC scores among the different personality traits (P < 0.05). The sanguine group had the lowest (best) postoperative WOMAC scores, with a mean of 37.9 (SD 9.2), whereas the melancholic group had the highest (worst) scores, with a mean of 51.7 (SD 8.2). There was a statistically significant difference in the change of total WOMAC scores among the different personality traits (P < 0.05). The sanguine group showed the greatest improvement, with a mean change of 77.6 (SD 11.3), while the melancholic group showed the least improvement, with a mean change of 65.8 (SD 8.3).  MCER There was a statistically significant difference in MCER among the different personality traits (P < 0.05). The melancholic group had the highest MCER, with a mean of 3504.7 $/QALY (SD 576.2), indicating they would pay the highest costs for the same QALYs. The sanguine group had the lowest MCER, with a mean of 2264.0 $/QALY (SD 421.6), indicating they pay the least for the same QALYs.  A sanguine personality was significantly associated with a lower MCER (adjusted OR = 0.8, 95% CI = 0.7–0.9, P < 0.001). A melancholic personality was significantly associated with a higher MCER (adjusted OR = 1.2, 95% CI = 1.1–1.3, P < 0.001).  There were statistically significant differences in all of the cost categories among different personality groups (P < 0.05), except for surgical procedures, where no significant difference was observed. The sanguine group had the lowest costs across all categories except for surgical procedures, and the melancholic group had the highest costs. |
| Singh,2016, united states of america | cohort study | to investigate of pessimist explanatory style has less favorable health outcomes after total hio arthroplasty | primary=488/revision=196,primary=67.4 +- 11.6 / revN=67.8+- 11.5,primary male=42.6% / revision male=46.9% , stratified percentages were reported | total hip arthroplastyl and revision THA | Optimism-Pessimism (PSM) scale of the Minnesota Multiphasic Personality Inventory (MMPI) questionnaire | 2 years postoperative | moderate to severe pain Improvement in hip function Activity limitation | Primary THA Outcomes Moderate-Severe Pain: Pessimists showed a non-significant trend towards more moderate-severe pain at 2-years post-surgery compared to non-pessimists. - The odds ratio (OR) was 2.16 with a 95% confidence interval (CI) of (0.90, 5.20) and a p-value of 0.08. - 12.3% of pessimists reported moderate-severe pain compared to 8.6% of non-pessimists.  Improvement in Hip Function: There was no significant difference in the absence of "much better" improvement in hip function at 2-years between pessimists and non-pessimists. - The odds ratio (OR) was 1.87 with a 95% confidence interval (CI) of (0.77, 4.52) and a p-value of 0.16. - 17.6% of pessimists reported a lack of "much better" improvement compared to 12.7% of non-pessimists.  Moderate-Severe Activity Limitation: - Pessimists reported a significantly higher rate of moderate-severe activity limitation at 2-years post-surgery. - The odds ratio (OR) was 2.90 with a 95% confidence interval (CI) of (1.25, 6.70) and a p-value of 0.01. This result was statistically significant even when using an adjusted p-value threshold of 0.017 for multiple comparisons. - 42.2% of pessimists reported moderate-severe activity limitation compared to 32.4% of non-pessimists.  Revision THA Outcomes Moderate-Severe Pain: There was no significant difference between pessimists and non-pessimists in reporting moderate-severe pain at 2 years post-revision THA. - The odds ratio (OR) was 1.18 with a 95% confidence interval (CI) of (0.50, 2.81) and a p-value of 0.71.  Improvement in Hip Function: There was no significant difference between pessimists and non-pessimists in reporting "much better" improvement in hip function at 2 years post-revision THA. - The odds ratio (OR) was 1.08 with a 95% confidence interval (CI) of (0.52, 2.27) and a p-value of 0.83.  Moderate-Severe Activity Limitation: There was no significant difference between pessimists and non-pessimists in reporting moderate-severe activity limitation at 2 years post-revision THA. - The odds ratio (OR) was 1.73 with a 95% confidence interval (CI) of (0.76, 3.94) and a p-value of 0.19 |