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|  Supplementary Table 2. Summary of results of prevalence of burnout and associated potential risk factors of the included studies. |
| **Author/year/****period survey** | **Residents speciality** **& N sample** | **Burnout** **tool**  | **Prevalence of burnout****N (%)** | **Risk factors**  |
| ***Without comparator group*** |  | **Burnout** | **No Burnout**  | **Associated** | **Not associated** |
| Alkhamees et al., (2021)36(March15th –April 23th) | Psychiatry-N=121 | MBI-HSS | 33 (27.3%) | 88 (72.7%) | -Depression (OR=8.88, 3.56-33.13; p=0.001)-Mental help (OR=6.59, 2.60-16.70, p<0.05) | -Age, gender, civil status -Raising children-Year of R |
| Chow et al., (2020)23(March 31th-April 6th) | OR-N=119 | Single-item | 29 (24.4%)  (17.0%-31.8%) | 90 (75.6%) (68.2%-83.0%) | -Women (p=0.001)-R2 (p=0.007) | -Severity of Covid-19. |
| Farsi et al., (2020) 37(May 2020) | All specialties-N=328 | MBI-HSS | 44 (13.8%) | 276 (86.2%) | -Men (p=0.017), DC (p=0.05)-Changed living place (p=0.035) | -Age, civil status-Children-Year of R |
| Kannampallil et al., (2020)24 (April 10th-25th) | All specialties-N=393 | PFI | 160 (40.7%) | 233 (59.3%) | -DC (p=0.011). After adjusted by gender, civil status, children, year of R (p=0.0023) |  |
| Khalafallah et al., (2020)25 (May, two weeks) | Neurosurgery-N=111 | *a*MBI | 29 (26.1%) | 82 (73.9%) | -No choose the speciality again (p=0.001)-Lower post-graduate year (p=0.001)-Alt. rotation (p=0.016) |  |
| Kaplan et al., (2021)26(April 14th-May 11th) | All specialties-N=560 | Mini-Z.Single-item (EE) | **2**00 (35.8%) | 166 (29.7%) | -Speciality (AOR=2.8, 1.49-5.40; p=0.002)-Psychiatry history (AOR=1.77, 1.07-2.91; p=0.03)-Increased hours (AOR=2.40, 1.41-4.12; p**<**0.001) -Other med.specialties (AOR=2.8, 1.49-5.40; p=0.002)-Duty related worries (AOR=1.87, 1.33-2.67; p=0.001) -Personal career (AOR=1.76, 1.20-2.59; p=0.004) -Coping strategies: self-blame/venting (AOR=1.97, 1.27-3.05; p=0.002); substance use (AOR=2.34 (1.12-4.97; p=0.02), and not value by immediate supervisor (AOR=0.41, 0.21-0.79; p=0.008)  | -Age, civil status-COVID infection worries, infected others, -Resilience and camaderie |
| Mendoça et al., (2021)42(April, 2020) | All specialties-N=1392 | OLBI | 686 (49.2%) | 706 (50.7%) | -No clinical speciality (p<0.05). |  |
| Mion et al., (2021)30(March 7-21th) | Anaesthesia (AR)DermatologyOthers-N=1055 | MBI | 578 (55%) | 472 (45%) | **-**N of calls (OR=1.12, 1.05-1.19; p=0.0004) -Psychiatry history (OR=1.70, 1.23-2.34; p<0.001)-Interpersonal conflict (OR=1.70, 1.23-2.34; p=0.002)-Desire to quit speciality (OR=4.05,1.65-9.95; p=0.002)-Fatigue (OR=1.12, 1.04-1.20; p=0.004) -Job satisfaction (OR=0.89, 0.82-0.96; p=0.004)-Depression (OR=1.34,1.01-1.80; p=0.046) | -Sleep-Weekly hours-Impact on personal life, being overwhelmed, -COVID patients/week-Feeling protected, clear procedures, being lonely, ethical conflicts-Life satisfaction, -Worried for loves one. |
| Treluyer & Tourneux(2020)31 (1st week of May) | Paedriatric-N=340 | MBI-HSS | 127 (37.4%) (32.2-42.7%) | 213 (76.5%) (57.2-67.8%) | -Women (OR=0.47, 0.26-0.84; p=0.01) - > 60h working (OR=3.98, 1.55-11.65; p<0.001) -Anxiety score (OR=1.02, 1.01-1.03; p<0.001) | -Age, civil status-Year of R-N of shift, and DC. |
| Cravero et al., (2020)44(April 20th-May 11th) | All specialtiesN=926 | *aa*MBI | 580 (62%) | 345 (38%) | -Age (26-30: AOR=1.55, 1.16-2.40 to 36-40: 4.03, 2.12-7.63)-Partnered (AOR=1.57, 1.06-2.33)-Country: China (AOR=1.86,1.08-3.19); Saud Arabia (AOR=3.45,1.87-6.37); Taiwan (AOR=2.68,1.51-4.78)-N COVID-19 patients [from 1-30 (AOR=1.90, 1.29-2.51) to >60 (AOR=4.03, 2.12-7.63)]-PPE availability: compared to always, most of the time (AOR=1.99, 1.41-2.80) and sometimes AOR=2.81, 1.60-4.91)-Colleague with COVID-19 (AOR=1.71, 1.26-2.37) | -Gender-Children-To be single or others-Change of schedule |
| Khoodoruth et al., (2021)39 (May17th-June16th,2020) | All specialties-N=127 R  | ProQOL |  N=0 (0%) | N=127 (100%) |  | -Gender-Year of R. |
|  |  |  | **Burnout dimensions (High EE, High DP, Low PA)** |  |  |
| Alkhamees et al., (2021)36(March15th –April 23th) | Psychiatry-N=121 | MBI-HSS | High EE 32 (26.4%)High DP 13 (10.7%)Low PA 29 (24%) | Low EE 89 (74.6%)Low DP 108 (89.3%)High PA 92 (76%) | -Depression [AOR= 5.60 (1.94-16.12), p<0.05)]-Depression [AOR= 3.33 (0.067-16.47), p<0.05)]-Depression [AOR= 2.84 (1.02-7.94), p<0.05)] | -Age, sex, civil status, raising children, year R, previous need of mental help. |
| Farsi et al., (2020)37(May 2020) | All specialties-N=328 | MBI-HSS | High EE 161 (50%)High DP 92 (28.8%)Low PA 134 (41.9%) | Low EE 161 (50%)Low DP 227 (71.2%)High PA 186 (58.1%) | -Children (p=0.029), and daily DC (p=0.003)-Men (p=0.05), and daily DC (p<0.001) | -Age, gender, civil status, year R-Age, civil status, children, year R-Age, gender, civil status, year R, and daily DC |
| Treluyer & Tourneux(2020)31(1st week of May) | Paediatric-N=340 | MBI-HSS | High EE 80 (23.5%)High DP 96 (28.2%)Low PA 86 (25.3%) | Low EE 260 (76.5%)Low DP 244 (71.8%)High PA 254 (74.7%) |  |  |
| ***With comparator group*** |  | **Burnout N (%)****Residents Others** |  |  |
|  Civantos et al., (2020)27(April 14th-25th) | ORL-N=165 R-N=184 O (staff physicians) | Mini-Z BABurnout Assessment  | 49 (29.7%)116 (70.3%) | 27 (14.7%)157 (85.3%) | -B: R > O (OR: 0.28, 0.11-0.68; p=0.001) -R+O was associated: with age (women), sex, surge status, and DC (p=0.005) |  |
| Appiani et al., (2021)43(May 2020) | All specialties-N=103 R-N=199 O (heads and staff physicians) | MBI | 93 (90.3%)  | 129 (63.7%)  | -B: R > O (p<0.05)-R+O was associated: DC, perception of non-adequate training, transient COVID-19 symptoms, hours of duty |  |
|  |  |  | **Burnout dimensions (EE, DP, PA)** **N (%)** |  |  |
| Al-Humadi et al., (2021)45(March 24th-May 15th) | All specialties-N=113 T-N=12 (49.8%) O  | Two single ítems of MBI | EE 18 (15.9%) DP 23 (20.4%) | EE 25 (22.3%)DP 13 (11.6%) | -EE and DP dimensions: R = O (p=0.736)-R+O was associated: negatively with age, and positively with history depression/anxiety and N of times on call in the last month |  |
| Coleman et al., (2021)28(July) | Surgery -N=465 R-N=695 O (young surgeons) | *a*MBI | EE 257 (55%) DP 180 (39%)PA 209 (45%) | EE 385 (56%)DP 204 (30%)PA 307 (45%) | -EE dimension: R = O (p=0.96)-DP dimension: R > O (p=0.002)-PA dimension: R = O (p=0.94) |  |
|  |  |  | Burnout dimensions (HighEE, HighDP, LowPA) |  |  |
| Coleman et al., (2021)28 (July) | Surgery -N=465 R-N=695 O (young surgeons) | *a*MBI | High B 209 (42%)Low B 256 (38%) | High B 284 (58%)Low B 411 (62%) | -High B: R = O (p=0.18)-R+O: High B(≥ 2 symptoms)was associated with sex (M), reduction elective operation, DC, perceived less adequate PPE access, and less support) (p<0.05) |  |
| Lasalvia et al., (2021)33(April 21th-May 6th) | Medical specialties-N=335 R-N=1626 O (nurses, physicians, others healthcare staff, administratives) | MBI-GS | High EE 17 (34.9%)Low EE 218 (65.1%)High DP 112 (33.4%)Low DP 223 (66.6%)Low PA 244 (63.9%)High PA 121 (36.1%) | High EE 752 (38.3%)Low EE 584 (61.7%)High DP 367 (22.6%)Low DP 1259 (81.4%)Low PA 911 (46.5%)High PA 715 (43.5%) | -High EE: R < O [AOR: 1.82 (1.13-2.94) (p=0.014)] Sex, living conditions, DC length experience, job stress, psychological history, and interpersonal avoidance. -High DP: R > O [AOR: 2.02. (1.24-3.27) (p=0.004)] Psychological history, job stress, intern-personal avoid, and DC.-Low PA: R > O [AOR: 2.61 (1.71-3.98) (p=0.14)] Psychological history, interpersonal avoid |  |
|  |  |  | **Burnout dimensions [mean (SD) median (IQ)]** |  |  |
| Aebischer et al., (2020)32(May 9th-14th) | All specialties-N=227 R-N=550 S (N=296, students DC Covid-19/ N=254 NDC | *aa*MBI | N=140 frontline EE 2 (1-4)DP 2 (0-4) | N=160 frontlineEE 1 (0-3)DP 1.5 (0-4) | **-**EE median dimension: R > O (p<0.01)-DP median dimension: R = O (p=0.36) |  |
| Elghazally et al., (2021)38(June-July 2020) | All specialties-N=67 R-N=134 O (assistant lecture, specialist/lecturer, assist. professor/professors) | MBI | EE 27.4 (1.3) DP 23.6 (1.3)PA 26.1 (1.4) | EE 20.8 (1.7)DP 14.5 (1.3)PA 33.4 (1.6) | -EE mean dimension: R > O (p=0.01)-DP mean dimension: R > O (p<0.001)-PA mean dimension: R < O (p<0.001) -R+O: EE (hours per day, age) (p<0.05), DP (hours per day, DC, mixed shits, age) (p<0.05) or PA (hours per day, age) (p<0.05) |  |
| Bahadirli and Sagaltici (2021)40(July 2020) | Emergency physicians -N=153 R-N=95 S-N=83 P | MBI |  EE 23 (18-26)R DP 10 (8-12) PA 21 (18-25) |  EE 19 (14-23)S DP 8 (7-11) PA 23 (18-27) EE 22 (18-28) P DP 10 (7-12) PA 21 (16-25) | -EE mean dimension: R = P > S -DP mean dimension: R = P, R > S, P > S -PA mean dimension: R = S = P**-**EE dimension: depression, stress, having Covid, 24h shifts, less job and career satisfaction **-**DP: depression, 24h shifts, monthly income, less experience, and job satisfaction**-**PA: job satisfaction |  |
| ***Before/During pandemic*** |  | **Before During** **[N (%)/mean (SD)]** |  |  |
| Aziz et al., (2021)29(before July) | General surgery-N=1102 | One-question of burnout(MBI) | 365 (33.1%) | 737 (66.9%) | -B: during > before pandemic. -B > with year of R |  |
| Poelmann et al., (2021)35(December 30th-January 31th) & (April 19th –May 5th 2020) | Surgery-N=305 before-N=288 during | UBS | 29 (9.5%) | 26 (9.0%) | -B: during = before pandemic -Higher B in non-academic: before > during pandemic (p=0.007) | -Gender, children, fulltime /parttime, year of residency, Covid infection, or Covid/Non Covid ward |
| Degraeve et al., (2020)34(April 29th-May 3rd) | Urology-N=62 | CBI Mean (SD) | CBIP 7.26 (3.89) CBIPro 9.02 (4.57) CBIR 4.42 (3.55) | CBIP 3.40 (3.38)CBIPro 4.35 (4.56)CBIR 3.03 (3.89) | -CBIP mean dimension: before > during pandemic [3.86 (2.61-5.09) (p<0.001)]-CBIPro mean dimension: before > during pandemic **[**4.66 (3.26-6.06) (p<0.001)]-CBIR mean dimension: before > during pandemic **[**1.38 (0.49-2.29) (p=0.003)]-DC (CBIP and CBIPro) (p=0.003), and junior and senior residents (NS) |  |
| Osama et al., (2020)41(before July) | Surgery specialties-N=97 | *d*MBI | 14.75 (3.54) | 8.33 (2.34) | -B mean score: before > during pandemic (p<0.001)-Working hours: during > before pandemic (p<0.001) |  |
|  |  |

 *Abbreviations:* B= Burnout; CBI=The Copenhagen Burnout Inventory, CBIP=CBI Personal dimension, CBIPro= CBI Professional dimension, and CBIR= CBI Inventory personal dimension; EE=Emotional exhaustion dimension; DC= direct contact with COVID-19 patients; DP= Depersonalization dimension; MBI=Maslach Burnout Inventory; *a*MBI= adapted MBI; *aa*MBI=Two single items derived from aMBI; *d*MBI= Dichotomized MBI (yes and non)]; MBI-GS= MBI-General Survey; MBI-HSS= MBI-Health Survey; Mini-Z Burnout assessment (range 1-5); NS= Not statistical significant; PFI=Stanford Professional Fulfilment Index; OQB=One-question of Burnout. SMDM= Shirom-Melamet Burnout Measure; M=Men. NDN=No direct contact with COVID-19 patients. O=Other health care professionals; PA= Personal accomplishment dimension; P= Physicians; R= Residents; R+O= total sample (residents plus others); TR= Trainees; S= Students; UBS=Utrecht Burnout Scal*e*; W=Women.

 aTrainees (73% residents and 27%fellows).