

1 **Promoting the engagement of the health worker: the role of secure workplace attachment, perceived**
2 **comfort, and relationship with patients**

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8

9 **Abstract**

10 Though place attachment has been widely studied for a variety of settings, little attention has been devoted
11 to place attachment in the workplace, particularly in healthcare environments. The objective of this research
12 is to verify the relationship between Secure workplace attachment and Work engagement through the
13 mediating effect of the work environment, in both spatial-physical and social-relational terms. A self-report
14 questionnaire was completed by 150 health personnel of different hospitals. Results show that a more Secure
15 workplace attachment is associated with a higher level of engagement, and such relationship is mediated
16 positively by the perception of environmental comfort and negatively by the feeling of having difficult
17 relationships with patients. These findings suggest the importance of addressing health workers' place
18 attachment in the hospital setting, with specific reference to the physical and social environment in which
19 the treatment is delivered, in order to increase their positive involvement toward their job activity.

20

21 **Keywords**

22 Place attachment, Comfort, Relationship staff/patients, Work engagement, Healthcare environment

23

24 **Introduction**

25

26 Place attachment has been conceptualized as a prominently affective bond that an individual establishes with
27 a meaningful place (Giuliani, 2003; Low & Altman, 1992). Places which have been investigated as sources of
28 attachment patterns are diverse, including the residential environment (at different scale levels, e.g., city:
29 Hidalgo & Hernandez, 2001; Maricchiolo et al., 2021; or neighborhood: Brown et al., 2003; Fornara et al.,
30 2019), natural settings (López-Mosquera & Sánchez, 2013; Moulay et al., 2018), agricultural settings
31 (Mullendore et al., 2015), and coastal areas (Lee & Oh, 2018), whereas workplaces have been scarcely
32 considered (Scrima et al., 2021). About behaviors supposed to be related to place attachment, an array of
33 them has been studied, including pro-environmental behaviors (Scannell & Gifford, 2010), citizenship
34 behaviors (Zenker & Rütter, 2014), geographical mobility (Gustafson, 2001), walkability (Ferreira et al., 2016),
35 space appropriation (Rioux et al., 2017), and recreational behaviors (Smith et al., 2010). Again, organizational
36 and job-related behaviors have received little attention (Scrima et al., 2021). The present study aims to fill
37 these gaps through the investigation of the relationship between workplace attachment and work
38 engagement in healthcare staff. Perceived spatial-physical comfort and relationships with patients are also
39 considered potential mediators of such a relationship. The conceptualization of workplace attachment has
40 been derived from the place attachment styles approach (Scannell, 2013), which originates from the classic
41 attachment theory (Bowlby, 1969). It suggests that adult individuals use internal working models (IWMs),
42 developed during early life experiences, to regulate social functions, that is, to relate to other individuals
43 (Belsky, 2002). This approach identified four attachment styles, i.e., secure, preoccupied, avoidant, and
44 disorganized, which derive from positive or negative representations of Self and the other (Bartholomew &
45 Horowitz, 1991). Specifically, positive representations of Self and others characterize a secure attachment;
46 negative representations of Self and others produce a disorganized attachment; positive representations of
47 others and negative representations of Self promote a preoccupied attachment; and finally, positive
48 representations of Self and negative representations of others are related to an avoidant attachment.
49 According to Scannell and Gifford (2014), there are overlapping points between the attachment processes

50 described in Bowlby's attachment theory (1969) and place attachment theory as developed in the
51 environmental psychology domain. Consistently with the proximity-seeking of a specific place that could
52 satisfy our needs (Cresswell, 2004), individuals activate behaviors to reduce the distance between themselves
53 and specific, meaningful places. Furthermore, places act as a "safe haven" (Scannell et al., 2021) since
54 individuals tend to find refuge in safe places where they can avoid specific stressors or "recharge the
55 batteries" to face everyday life (Korpela et al., 2002). A place can be experienced as a secure base (Fried,
56 2000) or as a point of reference that allows the individual to explore other places peacefully. According to
57 Scrima et al. (2017), the main difference between the classical attachment process and the attachment to
58 the place lies in the object of attachment; in fact, a child tends to "attach" to whatever source (i.e., an adult
59 or a place) that can satisfy his/her needs. In other words, here, the "other" is the place (Little & Derr, 2020).
60 This relationship with a meaningful place would be internalized by the child him/herself, who will create
61 his/her IWMs that will impact how, in adulthood, he/she will relate to other places. The construct of work
62 engagement is particularly prominent in the current work scenario, where dynamism and challenge to work
63 skills, as well as the dimensions of proactivity, commitment, responsibility, individual growth, and well-being
64 at work, are becoming increasingly important. Work engagement can be defined as a positive, fulfilling, work-
65 related state of mind: a persistent and pervasive affective-cognitive state that is not focused on a particular
66 object, event, individual, or behavior (Schaufeli, 2012; Schaufeli & Bakker, 2010). Three dimensions
67 characterize work engagement, i.e., vigor, dedication, and absorption (Hakanen et al., 2019; Schaufeli, 2021;
68 Schaufeli et al., 2009). Vigor is connoted by high mental energy and resilience while working, a willingness to
69 invest effort in one's work, and persistence even in the face of difficulty. Dedication is characterized by a
70 sense of meaning, enthusiasm, inspiration, pride, and defiance toward one's work. Finally, absorption is
71 characterized by being completely focused and happily absorbed so that time passes quickly, and the worker
72 finds it difficult to detach him or herself from it. From the perspective of the Job Demands-Resources Theory
73 of organizational well-being (JD-R; Hu et al., 2017; Rattrie et al., 2020), work engagement is conceived as a
74 personal resource (Smith et al., 2021; Tisu et al., 2020). In addition, work engagement and job burnout are
75 considered opposite patterns, reflected by the dichotomies vigor vs. exhaustion, dedication vs. cynicism, and

76 absorption vs. reduced professional efficacy, respectively (Hakanen & Schaufeli, 2012; Nonnis et al., 2021;
77 Schaufeli et al., 2004; Schaufeli et al., 2017). Regarding the specific context of healthcare settings, several
78 studies have highlighted the importance of the construct of work engagement as a variable involved in
79 organizational processes where healthcare workers are requested to manage job commitments and
80 demands. For example, a significant role of work engagement was found in counteracting job demands and
81 fostering healthy working (connoted by commitment and satisfaction) in a study conducted with physicians
82 and nurses in intensive care units (van Mol et al., 2018). Another study, conducted with dentists through a
83 longitudinal design, showed that work engagement negatively predicts depressive symptoms and is positively
84 associated with life satisfaction (Hakanen & Schaufeli, 2012). Work engagement was also found as a mediator
85 (along with job satisfaction) of the relationship between resilience and job performance in various workers
86 of helping professions, including nurses, physicians, physical therapists, and psychologists (Kašpárková et al.,
87 2018). More recently, studies on work engagement in healthcare settings and hospitals have also focused on
88 the Covid-19 pandemic. For example, Poelmann et al. (2021) found both a marked decrease in work
89 engagement (and a corresponding increase in burnout) and a consistent deterioration in the quality of
90 training due to the pandemic in a sample of surgical staff. Liu et al. (2021) have instead highlighted how
91 perceived Covid-19 crisis strength influences negatively work engagement and taking care of the medical
92 staff of an intensive care unit who were asked to care for Covid-19 patients in critical conditions. In the
93 following paragraphs, empirical support will be presented for the research hypotheses of the present study,
94 which addresses the connections between staff members' work engagement and, respectively, their level of
95 secure workplace attachment, their perceived spatial-physical comfort, and, finally, their relationships with
96 patients.

97

98 **1. The implications of secure workplace attachment**

99

100 **1.1. Secure workplace attachment and work engagement**

101

102 Starting from the assumption that the workplace is a meaningful place (Scrima, 2020), the relationship
103 between workplace attachment and other variables has begun to receive attention in the last two decades
104 (e.g., see Rioux, 2006). For example, it was found that workplace attachment impacts employee satisfaction
105 (Rioux & Pignault, 2013; Scrima et al., 2019). If a workplace can satisfy employees' needs, employees would
106 create a strong emotional and cognitive bond with the workplace, positively impacting overall job
107 satisfaction. Workplace attachment is also positively associated with organizational citizenship behaviors
108 (Rioux & Pavalache-Ilie, 2013). A strong emotional bond with the workplace allows employees to feel
109 comfortable at work, increasing the likelihood of activating organizational citizenship behaviors. In the
110 present work, we will focus on the secure workplace attachment style (Scrima, 2020), conceived as an
111 emotional bond between employee and workplace characterized by positive representations of the Self and
112 the workplace. Some recent studies have demonstrated the protective or motivational role of secure
113 workplace attachment in some organizational variables. For example, secure workplace attachment reduces
114 exhaustion (Scrima et al., 2021) and increases organizational citizenship behaviors (Nonnis et al., 2022; Bruny
115 et al., in press). To date, there are no studies that investigated the relationship between secure workplace
116 attachment and work engagement. However, thanks to positive experiences in the workplace, the employee
117 could create positive representations of Self and place (Scrima et al., 2017), where the workplace is seen as
118 a useful resource to cope with exhaustion (Scrima et al., 2021). Furthermore, individuals with secure adult
119 attachments have shown to develop numerous emotional resources that will allow them to fully engage in
120 the social environment (Feeney & Noller, 1991). In accordance with this literature, it is hypothesized that:

121

122 H₁: Secure workplace attachment style is positively related to Work engagement.

123

124 **1.2. Secure workplace attachment and perceived comfort**

125

126 Perception of comfort has often been associated with low arousal levels and high pleasure levels (Warr, 2003)
127 and, with reference to the literature on adult attachment style, individuals with a secure attachment style

128 have more strategies for both keeping arousal levels low (Fonagy, 2004) and regulating emotions on pleasure
129 levels (Yang et al., 2018). Thanks to their past experiences, individuals with a secure attachment style have
130 internalized IWMs made up of stable and generalized attributes, such as desires, emotions, intentions, and
131 beliefs (Fonagy, 2003). Such IWMs will therefore influence the way individuals relate to others (Main et al.,
132 1995). Thus, satisfying past relationships with places should allow the individual to internalize IWMs
133 characterized by intentions, strategies, and beliefs that can influence the perception of comfort. A recent
134 study found, in fact, a significant positive correlation between secure workplace attachment style and
135 perceived comfort in the staff of elderly facilities (Nonnis et al., 2022). In the light of that, it is expected that:

136

137 H₂: Secure workplace attachment style is positively related to Perceived comfort.

138

139 **1.3. Secure workplace attachment and relationships with patients**

140

141 In adult attachment theory, there is a variety of scientific evidence showing how individuals with different
142 attachment styles differ in the way they perceive relationships with others (Mikulincer & Shaver, 2007). For
143 example, Berlanda and colleagues (2019) found that a secure attachment style of healthcare staff is
144 associated with a lower perception of violence with patients when compared to colleagues with avoidant
145 attachment style. On the other hand, an anxious attachment style seems to be associated with a high level
146 of healthcare operators' perceived anger in their relationships with patients (Baras et al., 2021). These
147 differences could be explained by the coping strategies developed by secure professionals who are more
148 successful in coping with difficult patient relationships (Berlanda et al., 2019). Empirical evidence suggests
149 the development of training courses for developing strategies to best face these critical situations (Bernaldo-
150 De-Quirós et al., 2015). Consistently with Keefer and colleagues (Keefer et al., 2014), it is assumed that a safe
151 relationship with the workplace could provide resources for preventing the occurrence of patients' hostile
152 behavior, starting from the assumption that attachment to place can benefit interpersonal relationships
153 (Scannell & Gifford, 2017). Perceiving the workplace as a "safe haven" could offer the opportunity for

154 healthcare professionals to use some places for self-regulation purposes, through managing negative
155 emotions and recharging emotionally and cognitively to cope with stressful situations with patients. Thus, it
156 is hypothesized that:

157

158 H₃: Secure workplace attachment style is positively related to Difficult relationships with patients.

159

160 **2. Spatial-physical comfort in healthcare settings**

161

162 The need for comfort in healthcare settings has been considered a key feature in the user-centered design
163 perspective (Gifford, 2007) and, more specifically, healthcare design humanization (Del Nord et al., 2015). As
164 stated by Arneill and Devlin (2002, p. 345), “the premise that a healthcare facility is designed as a ‘curing
165 machine’ for medical conditions, rather than as an environment to promote wellness for the individual, is
166 being challenged.” The importance of the healthcare workplace’s design attributes in staff outcomes has
167 been addressed by Ulrich and colleagues (2008) in their extensive literature review, where different design
168 features emerge as sources of injuries, stress, work effectiveness, and satisfaction. In this regard, the goal of
169 building “more humane hospital environments” (Nagasawa, 2000) refers to the quality of spatial-physical
170 attributes that healthcare places should possess for both a) promoting the health and well-being of patients
171 and staff and b) reducing their stress level, which can be very high for both categories, given their daily
172 contact with disease, pain, and (in some cases) death. Among these attributes of healthcare design quality,
173 the provision of comfort is one of the distinguished ones. In its broader sense, the comfort feature includes
174 spatial and sensorial comfort (in visual terms, i.e., adequate lighting and panoramic views; auditory terms,
175 i.e., avoidance of annoying noises; and climatic terms, i.e., adequacy of temperature and humidity), easiness
176 of orientation, and welcoming atmosphere (Fornara & Andrade, 2012). It has proven to significantly predict
177 the satisfaction with the care unit and the attribution of positive affective qualities to it in a heterogeneous
178 sample of healthcare users, including patients, visitors, and staff recruited in both in-patient and out-patient
179 areas (Fornara, 2005). This effect of comfort on satisfaction with the care unit was confirmed both in a

180 subsequent study carried out with patients, visitors, and staff recruited in in-patient areas only (Fornara et
181 al., 2012) and in another study with a sample of patients recruited in a different linguistic context, but only
182 for out-patient areas (Andrade et al., 2013). Regarding the relationship between workplace comfort and work
183 engagement, the scientific literature is generally scant and completely lacking for healthcare staff. In the few
184 exceptions found, Finch and colleagues (2017) highlighted the positive influence of standing desks on work
185 engagement related to their tasks compared to their colleagues who performed similar work in a seated
186 position. In addition, Clapp et al. (2021) showed that seat comfort, coupled with perceptions of ability to
187 concentrate on the tasks, was found to predict workers' flow at work (a highly pleasurable, time-limited form
188 of work engagement, Nielsen et al., 2010). Hansen et al. (2021) demonstrated the importance of daylighting
189 in perceived comfort, atmosphere, and work engagement. Shaw et al. (2021) also found that activities that
190 improve the comfort of older workers and workers with chronic illness and discomfort can mitigate their
191 fatigue and boost their self-efficacy and work engagement. Thus, it is hypothesized that:

192

193 H₄: Perceived comfort is positively related to Work engagement.

194 H₅: Perceived comfort mediates the relationship between Secure workplace attachment style and Work
195 engagement.

196

197 **3. The role of the relationships with patients**

198

199 The influence of the relationship between healthcare professionals and patients on their work engagement
200 has received some interest in recent years. For example, an exploratory study with Italian oncology physicians
201 found that adequate relationship skills with patients (acquired through special training) were able to amplify
202 their work engagement and prevent work stress (Russo et al., 2014). The qualitative study of Carpenter-Song
203 and Torrey (2015) showed that the relationship with patients (and colleagues) is one of the most powerful
204 factors of work engagement in a sample of American psychiatrists. Conversely, Layne and colleagues (2019)
205 found that negative relationships with patients, characterized by aggressive behaviors, threats, and fear, can

206 represent a barrier to the emergence of positive outcomes in healthcare professionals and their work
207 engagement. Another study, conducted with Chinese physicians within the frame of the JD-R Model (Hu et
208 al., 2017), showed that difficult physician-patient relationships hinder physicians' prosocial motivation and
209 impede their problem-solving ability, consequently impairing their work engagement (Zhang et al.,
210 2020). Consistently with this empirical evidence, it is expected that:

211

212 H₆: Difficult relationships with patients are negatively related to Work engagement.

213 H₇: Difficult relationships with patients mediates the connection between Secure workplace attachment style
214 and Work engagement.

215

216 **4. Method**

217

218 **4.1. Participants**

219

220 To estimate the power of the model, a post-hoc Monte Carlo simulation was carried out using the statistical
221 tool by Schoemann (2017): setting the sample size (N = 150) with 1000 Power Analysis Replications (20000
222 Monte Carlo Draws for Replications) and a confidence level of 95%, the tool returned the power of .84 for
223 the first indirect path (Secure WA style - Perceived comfort - Work engagement) and of .89 for the second
224 indirect path (Secure WA style - Difficult relationship with patients - Work engagement). Therefore, the
225 power of the model was adequate. The research sample consisted of 150 health workers - operating in 3
226 different hospitals in the metropolitan city of Cagliari - who voluntarily accepted to participate in the study.
227 The sample consisted of 114 nurses (76%) and 36 social healthcare operators (24%), of which 113 women
228 (75.3%) and 34 men (22.7%). Due to constraints posed by the hospital managers, we were able to collect age
229 information of participants only in terms of age ranges: 8 of them were under 31 years old (5.3%), 8 were
230 between 31 and 45 (32%), 75 between 46 and 60 (50%), and 13 over 60 (8.7%). Most of them had a high

231 school diploma (52%, n = 78) or were university graduates (36.7%, n = 55), while 12 (8%) had a middle school
232 diploma.

233

234 **4.2. Tools and procedure**

235

236 The research was conducted in full compliance with the Ethical Principles of Psychologists and Code of
237 Conduct of the American Psychological Association (APA) and was authorized by the Ethics Committee of the
238 University of Cagliari (approval number 73624, dated 30 March 2021). After receiving the authorization from
239 hospital managers, a paper-and-pencil questionnaire was administered to those health workers who
240 voluntarily chose to participate in the study. After giving their informed consent, they filled in a
241 questionnaire, including the following measures.

242 **Work engagement:** We used the Utrecht Work Engagement Scale Short Version (UWES-9; Schaufeli et al.,
243 2006) in its Italian validation (Balducci et al., 2010). The measure includes nine items (Alpha = .93) that cover
244 various aspects concerning engagement, such as the vigor (e.g., *“At my job, I feel strong and vigorous”*), the
245 dedication (e.g., *“I am enthusiastic about my job”*), and the absorption (e.g., *“I am immersed in my work”*).

246 **Secure workplace attachment style:** the five items (Alpha = .75) tapping the Secure attachment from the
247 Workplace Attachment Style Questionnaire (WASQ; Scrima, 2020) were used (e.g., *“My workplace is like me”*)
248 after asking respondents to think about their workplace, its rooms and corridors, the color of its walls, its
249 sounds, noises, and smells, and the people with whom they usually shared (Bruny et al., in press).

250 **Spatial-physical comfort:** we used a 13-item scale (Alpha = .77), adapted from the short version of the
251 Perceived Healthcare Environment Quality Indicators (PHEQIs; Andrade et al., 2012; Fornara et al., 2006)
252 already used in a previous study (Fornara et al., 2012): three items measured the attention to furnishings and
253 surfaces (e.g., *“The furniture is in good condition”*), two the acoustic comfort (e.g., *“Screams and shouts are
254 heard”*), two the climatic comfort (e.g., *“The humidity level is adequate”*), three the views (e.g., *“From the
255 windows you can see green areas”*) and three the orientation (e.g., *“The entrance to the ward is welcoming”*).

256 **Difficult relationships with patients:** the five items (Alpha = .80, e.g., “*They give instructions that can*
257 *complicate our work*”) of the subscale “ambiguous customer expectations” of the Customer-Related Social
258 Stressors scale (Dormann & Zapf, 2004) were used to evaluate the type of relationships between hospital
259 patients and health care personnel.

260 For all these measures, the response scale consisted of a 7-step Likert scale (from 1 = “Completely disagree”
261 to 7 = “Fully agree”). At the end of the questionnaire, there was a section for collecting socio-demographic
262 data (gender, age group, profession, and education level).

263

264 **4.3 Data analysis**

265

266 Research hypotheses were tested through the model 4 of the PROCESS macro (Hayes, 2015) of the SPSS v.26
267 software, setting Secure workplace attachment style as independent variable (IV), Perceived physical-spatial
268 comfort (M_1), and Difficult relationships with patients (M_2) as parallel mediators, and Work engagement as a
269 dependent variable (DV). Age (expressed in intervals) and gender were entered as covariates. We also
270 calculated the bootstrap confidence interval to test the indirect effect of both mediations: ninety-five percent
271 CIs were used, and 10000 bootstrapping resamples were run.

272

273 **5. Results**

274

275 **5.1 Preliminary analysis**

276

277 In order to verify their factorial structure, confirmatory factor analyses (CFAs) were conducted on the two
278 multi-dimensional scales (i.e., Work engagement and Perceived comfort) using the software JASP v. 0.16.
279 CFAs results (Table 1) confirmed the monofactorial structure for both scales. In Table 2 are presented the
280 mean scores, the univariate normality, and the bivariate correlations between the variables under study.
281 Normality assumption resulted as not violated for all the measures, as confirmed by the skewness and

282 kurtosis values, all between -1 and +1. Secure workplace attachment was positively associated with Perceived
283 comfort ($r = 0.24, p < .01$) and Work engagement ($r = 0.52, p < .001$), and negatively associated with Difficult
284 relationships with patients ($r = -0.26, p < .01$). This means that healthcare professionals with a Secure
285 workplace attachment showed higher levels of Perceived comfort and Work engagement and better
286 relationships with patients. Perceived comfort was negatively correlated with Difficult relationships with
287 patients ($r = -0.17, p < .05$) and positively correlated with Work engagement ($r = 0.31, p < .001$). Finally,
288 Difficult relationships with patients were negatively associated with Work engagement ($r = -0.32, p < .001$).

289

290 **5.2 Model testing**

291

292 Figure 1 shows the model results. As hypothesized (H1), the Secure workplace attachment style was
293 positively associated with Work engagement ($B = 0.45, p < .001$). Healthcare professionals with high levels of
294 Secure attachment style reported high levels of Work engagement. As expected, the Secure workplace
295 attachment style was positively associated with the Perceived comfort (H2) ($B = 0.23, p < .01$) and negatively
296 with Difficult relationship with patients (H3) ($B = -0.19, p < .05$), explaining respectively 15% and 6% of their
297 variance. As expected (H4), Perceived comfort was positively associated with Work engagement ($B = 0.20, p$
298 $< .05$), and (H6) Difficult relationships with patients were negatively correlated with Work engagement ($B = -$
299 $0.20, p < .05$), explaining the 35% of its variance. This means that operators showing higher Perceived
300 comfort and lower Difficult relationships with patients reported higher levels of Work engagement. Finally,
301 a partial mediation effect of both Perceived comfort ($B = 0.05, LLCI = .01, ULCI = .10$) and Difficult relationships
302 with patients ($B = 0.04, LLCI = 0.01, ULCI = 0.08$) emerged in the relationship between Secure workplace
303 attachment style and Work engagement, thus confirming, respectively, H5 and H7.

304

305 **6. Discussion and conclusions**

306

307 Place attachment has an engaging power (Manzo & Devine-Wright, 2013) since individuals with a strong
308 place attachment are more concerned about climate change issues (Scannell & Gifford, 2013) and are more
309 engaged in civic behaviors (Stefaniak et al., 2017) and pro-environmental actions (Takahashi & Selfa, 2015).
310 This could be due to the fact that individuals are supposed to internalize meaningful places which will become
311 an integral part of their identity (Scrima et al., 2021). Consistently, our hypothesized positive relationship
312 between secure workplace attachment and work engagement (H1) is confirmed, also in line with previous
313 research based on the classic attachment theory (Bowlby, 1969), showing that a secure attachment style
314 promotes work performance (Kale, 2020; Ronen & Zuroff, 2017; Vîrgă et al., 2019), extra-role behavior (e.g.,
315 organizational citizenship behavior: Little et al., 2011; Nonnis et al., 2022), job satisfaction (Loi et al., 2014;
316 Rioux & Pignault, 2013; Scrima et al., 2019), and protection from burnout symptoms (Pšeničný & Perat, 2020;
317 Scrima et al., 2021), stress (Johnstone & Feeney, 2015) and workaholism (Tziner & Tanami, 2013). Employees
318 who integrate into their identity that IWMs, typical of a secure workplace attachment, will thus experience
319 organizational problems as their ones and will be personally committed to improving the quality of their
320 work. Regarding H2, the outcome is coherent with findings of a previous study conducted in non-hospital
321 work environments (i.e., offices: Scrima et al., 2021), where a positive relationship between secure
322 attachment style and satisfaction toward the design of the workspace emerged in line with the literature on
323 workplace characteristics related to workplace attachment (e.g., Cole et al., 2021). Thus, a place that can
324 satisfy the needs of the individual should act as a "safe haven" (Scannell et al., 2021), that is the belief
325 concerning a place where it is possible to escape in case of need. Secure workplace attachment is
326 characterized by a positive representation of the place (Scrima et al., 2017) and the sense of familiarity and
327 rootedness with a place (Lewicka, 2011), both markers of the place attachment process, should promote a
328 greater perception of comfort. About H3, it is confirmed the importance of healthcare workers' positive
329 workplace attachment for creating and maintaining an optimal relationship with patients. In fact, in line with
330 the claim of Keefer and colleagues (2014), a secure workplace attachment is supposed to lower the operators'
331 feeling of aggressive behaviors toward them by patients, and, more generally, a positive place attachment
332 has been found to predict positive interpersonal relations (Scannell & Gifford, 2017). This is probably due to

333 the staff's psychological need to buffer the stressful valence of their relationships with patients, which
334 requires the attachment to a "secure base" (Bowlby, 1969) in order to recover the usual cognitive and
335 affective functions (Gustafson, 2001). Concerning H4, the evidence found on the positive link between
336 spatial-physical comfort and work engagement are consistent with what emerged in studies carried out with
337 students in Florida (Clapp et al., 2021), and with students and employees in an office space in Copenhagen
338 (Hansen et al. 2021), thus confirming the importance of feeling comfort in promoting work engagement also
339 in healthcare workers. More in general, this result provides further proof of the key role of the comfort
340 dimension in promoting positive responses toward the healthcare settings (Ulrich et al., 2008) across
341 different users, staff included (Fornara, 2005). The corroboration of H5 is substantially consistent with what
342 was found in office workers (Scrima et al., 2021), where satisfaction toward workplace design emerged as a
343 mediator dimension between a secure workplace attachment style and, with a negative direction, the feeling
344 of exhaustion, which can be considered as the opposite of vigor, i.e., one of the constitutive dimensions of
345 work engagement (Hakanen & Schaufeli, 2012; Schaufeli et al., 2017).

346 As regards H6, the outcome adds evidence to the literature on the connection between the quality of
347 staff/patients relationship in the healthcare places and work engagement. In fact, Layne et al. (2019) and
348 Zhang et al. (2020) found that negative and hostile relationships with patients compromise caregivers' work
349 engagement, whereas Russo et al. (2014) and Carpenter-Song and Torrey (2015) showed that, on the other
350 hand, positive healthcare professionals' relationships with patients enhance their work engagement. Finally,
351 about H7, the result substantially confirms the mediating effect of the staff/patients relationship between a
352 secure workplace attachment style and job-related outcomes, such as organizational citizenship behaviors
353 (OCBs), which emerged in staff employed in elderly facilities (Nonnis et al., 2022). Even though OCBs and
354 work engagement are different constructs, they both concern a worker's proactive commitment to his/her
355 job within a given organization. Thus, it is not surprising that both are associated with the occurrence of
356 positive relationships with patients. About the limitations of this study, the main one is the small sample size,
357 which is partly justified by the difficulty found in getting the authorization from the hospital managers for
358 interviewing the healthcare workers. Nevertheless, the power analysis corroborated our sample number,

359 considering the small number of variables (and parameters) taken into account. A second limitation concerns
360 the recruitment of participants, which occurred only on a voluntary basis within the selected hospital units,
361 thus potentially affecting sample representativeness and outcome generalizability. Further evidence is
362 needed to strengthen the validity of the emerged links. Future research should also consider objective or
363 expert assessments (see Gifford, 2007) of healthcare workplaces in order to compare them to staff
364 perceptions (e.g., see Andrade et al., 2012; Fornara et al., 2006). A third limitation regards the study's
365 correlational nature, which does not allow to draw causal inferences from the direct and indirect paths
366 tested. Finally, data were collected immediately before the Covid-19 pandemic, and we do not know whether
367 other dimensions could have assumed a prominent role in hospital staff's work engagement during the
368 pandemic's emergency (e.g., organizational variables). In conclusion, this contribution highlights how some
369 place-related patterns, such as workplace attachment and perceived spatial-physical comfort, can play a role
370 in the work engagement of health professionals. Work engagement is currently one of the most desirable
371 psychological work outcomes (Schaufeli, 2021) and, in this regard, it is to mention that healthcare
372 organizational contexts are electively at risk of burnout, which has been considered "the dark side" of work
373 engagement (Hakanen & Schaufeli, 2012; Nonnis et al., 2021; Schaufeli et al., 2004; Schaufeli et al., 2017;).
374 For this reason, it is particularly important to ensure high levels of work engagement in healthcare contexts,
375 also for the implications in terms of performance effectiveness and job satisfaction, and to reduce the
376 likelihood of burnout among healthcare workers, which is usually associated with experiences of exhaustion,
377 professional ineffectiveness, detachment from work, and cynicism toward patients (Hu et al., 2017; van Mol
378 et al., 2018). Our study further broadens the spectrum of psychological, social, and environmental
379 dimensions that are related to work engagement, in addition to the other features identified in the literature,
380 such as assertiveness, self-efficacy, and resilience (Bakker et al., 2021); job crafting and performance (van
381 Wingerden et al., 2015); proactive personality, core self-evaluation, and psychological capital (Tisu et al.,
382 2020); extra-role behaviors, personal initiative, job involvement, organizational commitment, job
383 satisfaction, flow at work, and positive affectivity (Schaufeli et al., 2010); as well as other strategies for
384 maintaining and enhancing work engagement, for example: improve communication skills, enhance

385 resilience and innovation (e.g., Hamamoto et al., 2018), and the development and use of the workplace
386 resources (e.g., Björk, 2021). From a practical point of view, besides the importance of fostering positive
387 relationships with patients through specific educational training for staff focusing on this key issue, the study
388 outcomes suggest that design attributes need attention to promote commitment in healthcare workers. In
389 other words, following the perspective of the healthcare design humanization (Del Nord et al., 2015), it seems
390 pivotal to the provision of spatial and sensorial comfort to hospital staff (e.g., through an adequate quality
391 of the furniture or climate) in order to increase the likelihood of positive job-related responses such as work
392 engagement. The key role of the relationships with patients (and their caregivers) underlines the need to
393 improve the skills of health workers in terms of active listening, tolerance, empathy, but also assertiveness,
394 and clarity (Cuccu et al., 2015; Davis et al., 2008; Jagosh et al., 2011; Kitson et al., 2012), especially when
395 facing situations marked by negative emotions (such as fear, grief, anger, and bereavement) that can make
396 communication difficult or critical. Finally, the healthcare management can foster workers' engagement
397 through the realization of activities that could develop in their staff a secure workplace attachment pattern,
398 which should also promote a positive perception of the social-relational (i.e., staff/patients relations) as well
399 as the spatial-physical (i.e., comfort) environment. Thus, in order to increase the likelihood of these beneficial
400 outcomes, the objective of setting up a (work)place as a "safe haven" (Scannell et al., 2021) for healthcare
401 workers should be accurately followed by the hospital managers.

402

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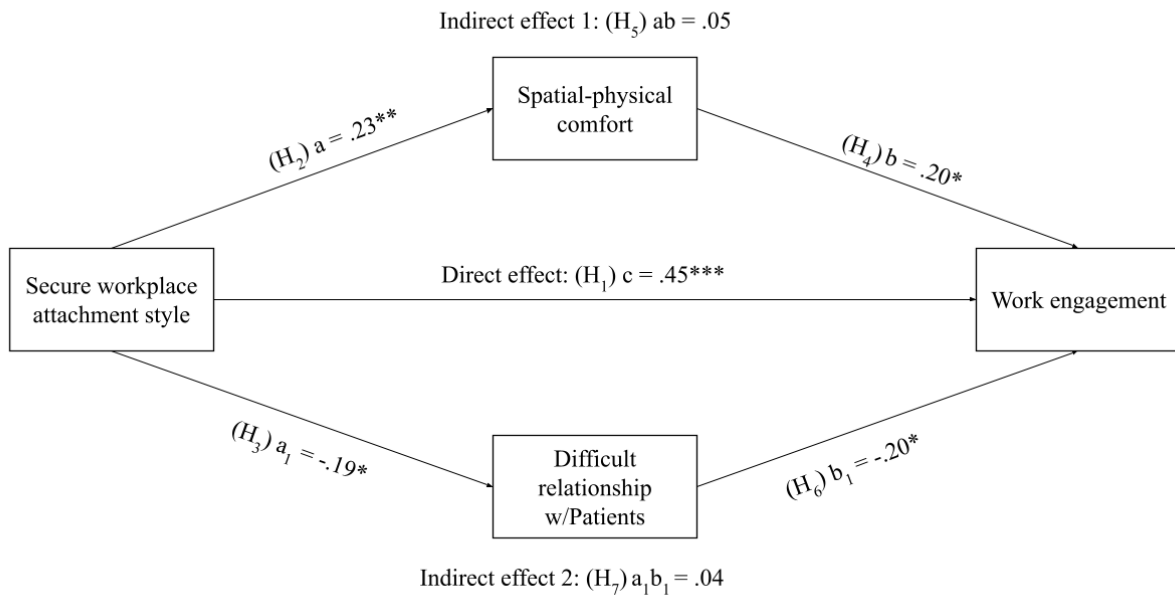
727

728 **List of figures and tables**

729

730 **Figure 1**

731 *Effect of Secure workplace attachment style on Engagement through Perceived comfort and Difficult*
732 *relationships with patients*



733

734 *Note: Dependent Variable = Work engagement; $R^2 = 0.56$; R^2 Change = 0.30 ($F_{(3,139)} = 19.60$, $p < .001$); Indirect*
735 *effect of Perceived comfort: $B = 0.05$, $BootSE = 0.02$, $BootLLCI = 0.01$ $BootULCI = 0.10$; Indirect effect of*
736 *Difficult relationship with patients: $B = 0.04$, $BootSE = 0.02$, $BootLLCI = 0.01$ $BootULCI = 0.09$.*

737

738 **Table 1**739 *CFA for Engagement and Comfort*

Work engagement	χ^2	<i>df</i>	<i>p</i>	χ^2/df	CFI	NNFI	SRMR
Uncorrelated 3-Factor	245.66	26	< .001	9.45	.80	.73	.42
3-Factor Model + 1 second order factor	36.00	23	< .05	1.57	.99	.98	.03
Spatial-physical comfort	χ^2	<i>df</i>	<i>p</i>	χ^2/df	CFI	NNFI	SRMR
Uncorrelated 5-Factor	1230.16	64	< .001	3.60	.82	.78	.24
5-Factor Model + 1 second order factor	82.80	54	< .01	1.53	.97	.96	.06

740 *Note:* CFI = comparative fit index; NNFI = (Non) Normed Fit Index; SRMR = (Standardized) Root Mean Square
 741 Residual.

742

743

744

745 **Table 2**746 *Descriptive statistics, bivariate correlations and Alpha in diagonal*

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	<i>S</i>	<i>K</i>	1	2	3	4
1. Secure workplace attachment	150	4.25	1.11	-.26	-.54	.75			
2. Spatial-physical comfort	150	4.06	.96	-.25	-.31	.24**	.77		
3. Difficult relationship w/patients	150	3.78	.96	.06	-.02	-.26**	-.17*	.80	
4. Work engagement	150	5.28	1.12	-.43	-.41	.52***	.31***	-.32***	.93

747 *Note:* * = $p < .05$; ** = $p < .01$; *** = $p < .001$; *M* = Mean; *SD* = Standard deviation; *S* = Skewness; *K* =
 748 Kurtosis.