



Mindfulness dispositions and defense style as positive responses to psychological distress in oncology professionals

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ABSTRACT

Purpose: Working in oncology departments is a stressful and emotionally consuming experience and oncology professionals are particularly at risk for developing stress-related syndromes. Defense mechanisms (high-adaptive) and mindfulness dispositions are known as facilitators of well-being and adaptation. In this study we analysed the role of these unconscious and conscious strategies in protecting the oncology clinicians from stress-related symptoms.

Method: A convenience sample of 63 oncology professionals was assessed on defense style, mindfulness disposition, depression and anxiety symptoms using self-reported questionnaires. Demographic and professional information was included in data collection.

Results: Results did not show significance differences in demographic and professional characteristics among all studied variables. Mature defense style and mindfulness were highly and negatively correlated with depression and anxiety, while a positive association was found between immature defense style and both depression and anxiety symptoms. Hierarchical multiple regression analyses found defense styles and mindfulness as predictors of depression, whereas only immature defense style predicted anxiety.

Conclusions: The present study provides the first empirical evidence of the influence of unconscious defense mechanisms and conscious mindfulness dispositions in protecting oncology professionals from depression and anxiety symptoms. Defense mechanisms and mindfulness share several common-points and should be seen as complementary in enhancing physical and psychological well-being. Further studies are required for a deeper understanding of the impact of mindfulness and defenses in improving adaptation.

1. Introduction

Working with cancer patients involves the management of complex pathologies with poor prognosis, causing severe pain, distress and death anxiety (De Carvalho et al., 2005). This is particularly challenging for oncology professionals, who are more at risk for developing work-related stress syndromes than their colleagues employed in other departments (Duarte and Pinto-Gouveia, 2016; Potter et al., 2010). The consequences of psychological distress among oncology staff have been studied (Mukherjee et al., 2009; Stenberg et al., 2010). Several studies showed a prevalence of burnout and secondary traumatic symptoms among oncology professionals. Feelings of compassion fatigue, guilt, disappointment, and hopelessness have been observed in about 60% of clinicians and tended to increase when working with cancer patients

(De la Fuente-Solana et al., 2017; Dougherty et al., 2009; Grau et al., 2005). Clinicians with higher level of stress showed also several physical and mental health problems, such as fatigue, insomnia, hypertension, depression, and anxiety (Carmassi et al., 2016, 2018; Maslach et al., 2001). Oncology clinicians having an appropriate defensive functioning and mindfulness disposition may be more capable of managing work-related stress.

Defence mechanisms are unconscious strategies that mediate the individual's response to internal conflicts and stressful situations (APA, 2013). They differentiate one from the other both in terms of adaptiveness level and psychological function (Perry, 1990; Vaillant, 1992, 2000). During the lifespan, people are likely to use a large range of defence mechanisms, although each person tends to use certain defences, depending on his/her psychological development and

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personality traits (Lingiardi et al., 2010; Perry and Bond, 2012). Healthy people tend to use mostly high-neurotic and mature defence mechanisms to deal with internal and external stressors, but their defensive functioning may fail down to immature defences in response to traumatic events (Perry et al., 2015). Several studies have observed the influences of defence mechanisms in stress management of oncology and other healthcare professionals. The use of avoidance, denial, displacement, compensation, regression, and withdrawal of emotional investment in response to psychologically demanding situations has been largely reported (Booth et al., 1996; Jones, 1999). In particular, experienced nurses tend to recur to emotional detachment and avoidance of personal feelings (Bruneau et al., 2004). Adaptive defence mechanisms in oncology nursing were associated with better attitudes toward death and care for dying patients (Kocijan et al., 2007), and also to patient satisfaction with clinician's communications and to working alliance (Bernard et al., 2010, 2012; De Vries et al., 2017). On the other hand, immature defences were associated with emotional exhaustion (Regan et al., 2009), higher levels of stress at work and high risk of suicide (Feskanich et al., 2002).

Mindfulness has been defined as a state in which one is highly aware and focused on the reality of the present moment, accepting and acknowledging it, without getting caught up in the thoughts or emotional reactions to the situation (Kabat-Zinn, 1994). Mindfulness practice encourages the individual to be consciously aware and attentive to the present experience in a non-judgmental way and to gradually learn how to concentrate on body sensations and emotions of the present moment (Kabat-Zinn, 2005). Research findings support the efficacy of mindfulness practice in enhancing physical and emotional well-being in healthcare staff (Al Daken and Ahmad, 2018; Fish et al., 2014). Dispositional mindfulness was associated with lower levels of perceived stress, increased emotional regulation and cognitive control (Beddoe and Murphy, 2004; Prakash et al., 2015). Recent findings highlighted the effectiveness of mindfulness-based training in reducing work-related stress, burnout and compassion fatigue and in increasing life satisfaction in oncology nurses (Duarte and Pinto-Gouveia, 2016). Mindfulness practice can induce more adaptive strategies in clinicians, with the effect of improving the patient's quality of life (Abeni et al., 2014). Moreover, it has been shown that mindfulness increases inner peace, compassion and joy in paediatric oncology staff (Moody et al., 2013). However, a recent review and meta-analysis suggested that, although mindfulness-based interventions have the potential to reduce stress among healthcare professionals, more high-quality research is needed to confirm these findings (Burton et al., 2017).

Findings from literature agree on the role of mindfulness disposition and defence mechanisms in managing work-related stress in healthcare professionals (Beddoe and Murphy, 2004; Dougherty et al., 2009; Duarte and Pinto-Gouveia, 2016). Both unconscious and conscious psychological strategies have been proven to help clinicians in dealing with the exposure to potentially traumatic situations at work. However, it is still unclear how defensive style is related to mindfulness and to what extent they together contribute in preventing psychological distress. To our best knowledge, only one study analysed both defence mechanisms and mindfulness effects on stress reduction (Abeni et al., 2014) and none tested oncology nurses.

The present study intends to fill this lack of empirical contribution, examining the associations between mindfulness, defence mechanisms and stress-related symptoms and testing the potential of conscious and unconscious strategies in predicting the adjustment to stress in oncology professionals. The main aim of this study is therefore to highlight how conscious and unconscious aspects associate with psychological protection and work-related stress symptoms such as depression and anxiety. First, we tested the existence of an association between mindfulness dispositions and defensive functioning, which are in turn related with psychological response to stress in oncology professionals (Hypothesis 1). Then, we tested a second hypothesis: defence style and mindfulness as good negative predictors of depression and anxiety in

oncology professionals (Hypothesis 2).

2. Methods

2.1. Sample

The sample consisted of 63 oncology professionals from Abruzzo Health Service in Central Italy. A convenience sampling of contacted health professionals was carried. To be eligible, they needed to directly care for cancer patients and have more than 1 year of clinical experience in oncology. Oncology professionals were contacted by one of the authors (GN) among his known colleagues working in the oncology departments. They were asked to divulgate the notice of the present study among other oncology professionals, who were free to decide whether to give their phone number in order to be contacted. Professionals who agreed in participating were asked to sign an informed consent to be included in the study and filled an anonymous socio-demographic information form and four questionnaires assessing the research variables. Among the 74 contacted professionals, 68 individuals (91.9%) agreed to participate in the survey, but five returned an incomplete booklet. The final sample thus included 63 oncology professionals. The majority of the participants were female (60.3%), married (57.1%), and nurses (69.8%), with an average experience at work of 17.8 years (standard deviation, SD = 10.66).

2.2. Outcome measures

The research protocol included demographic information and the Italian version of four questionnaires respectively assessing defence style, mindfulness disposition, depressive symptoms, and anxiety symptoms. Information about age, gender and marital status were collected as well as occupational variables including job position (i.e. physicians, nurses, and healthcare assistants) and years of experience in the profession. Psychological variables were assessed using the following self-report measures:

Defense Style Questionnaire-40 item (DSQ-40) Italian version (Farma & Curtinovic, 2001). The DSQ-40 is a 9-point Likert scale measure for assessing defence mechanisms. It contains 40 itemized statements about the actions a person performs in a difficult situation, which reflect 20 different defence mechanisms. The DSQ scores for specific mechanisms are then grouped into three domains of psychological adaptive styles: immature, neurotic, and mature defence. The DSQ-40 psychometric properties have been widely demonstrated (Andrews et al., 1993). Face validity is excellent for most of the items, although Spinhoven et al. (1995) and Saint-Martin et al. (2013) suggested the need to find more appropriate items to replace those lacking in face validity. Internal consistency of the Italian version of the DSQ-40 showed similar results as compared to the original questionnaire, with Cronbach's alpha ranging from 0.61 to 0.80 (Farma & Curtinovic, 2001).

Mindfulness Attention Awareness Scale (MAAS) - Italian version (Veneziani and Voci, 2015). The MAAS is a 15-item 6-point Likert scale that measures the tendency to be attentive and aware of present-moment experience in daily life in people with no specific experience in mindfulness practice. The scale takes less than 10 min to complete. The MAAS shows strong psychometric properties and is predictive of a variety of self-regulation and well-being constructs (Brown and Ryan, 2003). The Italian version of the questionnaire showed both good convergent and discriminant validity ($r = 0.37$; $p < .001$ and $r = -0.40$; $p < .001$ respectively) and confirmed the one-factor structure (Veneziani and Voci, 2015).

Beck Depression Inventory second edition (BDI-II) - Italian version (Montano and Flebus, 2006). The BDI is a 21-item self-report rating inventory that measures characteristic attitudes and symptoms of depression (Steer et al., 1999). It presents questions on specific depressive symptoms and asks respondents to rate their occurrence, using four alternatives ranging from "rarely" to "often." Each item is scored,

Table 1
Demographic, professional and psychological descriptive statistics.

	Number	Percentage	Mean	Standard Deviation	Skewness	Kurtosis
Gender						
male	25	39.7%				
female	38	60.3%				
Marital status						
single	23	36.5%				
married	36	57.1%				
divorced	4	6.3%				
Job position						
physicians	10	15.9%				
nurses	44	69.8%				
healthcare assistant	9	14.3%				
Age			45.11	10.66	-.140	-1.263
Experience			17.79	10.34	.229	-1.031
Mindfulness			45.30	6.83	-.414	-.347
Mature defence style			4.96	1.12	.287	-.782
Neurotic defence style			4.52	1.37	.093	-.224
Immature defence style			4.31	1.35	-.202	-1.165
Depression			9.46	7.27	.811	.530
Anxiety			40.81	12.23	.337	-.867

Note: experience is expressed in years and refers to working with cancer patients.

yielding a total BDI-II score. The BDI-II has been widely validated showing high reliability and improved concurrent, content, and structural validity (Wang and Gorenstein, 2013). The validation study of the Italian version of the BDI-II confirmed the bifactorial structure of the measure, with a Cronbach alpha of 0.86 for the first factor and 0.65 for the second factor (Montano and Flebus, 2006).

State-Trait Anxiety Inventory Form Y (STAI-Y) - Italian version (Pedrabissi and Santinello, 1989): The STAI is a questionnaire measuring trait and state anxiety. Form Y includes 20 items for assessing trait anxiety and 20 for state anxiety. All items are rated on a 4-point Likert scale. Higher scores indicate higher anxiety levels. Considerable evidence attests to the construct and concurrent validity of the scale (Spielberger, 1989) and test-retest reliability over a 2-month interval (Spielberger et al., 1983). Internal consistency of the Italian version of the questionnaire was good, with Cronbach alphas ranging from 0.86 to 0.89 (Balsamo et al., 2013).

2.3. Procedure

The present study is a part of a wider research project on the psychological effects of work-related stress in oncology nursing. Participants were informed about the main aims of the study and they were asked to give their voluntary and anonymous contribution by participating in the survey. A paper copy booklet was given to the participants for data collection. The estimated time to complete the survey was 30 min. Participants were asked to complete demographic and professional data form and questionnaires at home, and then to return the copy booklet to the researchers within one month. Ethical approval was not required since the participation to the study was exclusively on voluntary and anonymous basis and data collection was obtained outside working-time and institutional spaces using no invasive assessment methods. Data collection took place between April and October 2018.

2.4. Statistical analysis

A descriptive analysis of all variables was conducted estimating their mean and standard deviation when appropriate or percentages for categorical variables. As a first step we verified whether age, gender, marital status, job position and years of experience had an influence on psychometric variables. Participants were thus divided in groups based on the following criteria: 1) *age* (group 1: age \leq 30; group 2: 31–45; group 3: age \geq 46); 2) *gender* (group 1: male; group 2: female); 3)

marital status (group 1: single; group 2: married or cohabitating; group 3: divorced); 4) *job position* (group 1: physicians; group 2: nurses; group 3: healthcare assistants); 5) *experience at work* (group 1: \leq 5 years; group 2: between 6 and 15 years (6 and 15 included); group 3: 16 years or more). The putative between-group effect of each grouping variable was assessed separately for each psychometric variable using an independent-sample *t*-test or when appropriate, a one-way ANOVA.

Pearson's correlation analysis was then conducted, testing the associations between age, job position, experience at work, defences, mindfulness, depression, and anxiety. The grades of association between gender, marital status and job position were estimated using the Lambda measure, specifically used for correlating two categorical variables. Associations between categorical variables (gender, marital status and job position) on the one side and ratio variables on the other, were estimated using Eta-squared measures. As a further step, a Hierarchical Multiple Regression was performed aiming at the identification of predictors of depression and anxiety symptoms in oncology professionals. The first model (Model 1) included as independent variables only demographic and professional features. We added defence mechanisms in the second model (Model 2), and mindfulness disposition in the third model (Model 3). Significance level was set at $\alpha = 0.05$. Analyses were carried out using SPSS 22.0 statistical package. Tolerance values in all regression analyses were > 1 and variance inflation factors (VIF) were < 3.5 in Model 1 and Model 2. Model 3 showed VIF up to 7.2, indicating that the regression model was biased by multicollinearity. Some of the obtained results could have been biased by the relatively small sample size. Further studies with larger samples will be conducted to verify the findings herein described.

3. Results

3.1. Demographic, professional, and psychological characteristics of the participants

Descriptive statistics of the sample are presented in Table 1. The majority of participants were females (60.3%), age ranging from 24 to 62 years, with a mean of 45.11 (SD = 10.66). Regarding marital status, 57.1% of the participants were married or cohabitating, 36.5% were single, and 6.3% were divorced. Percentages of physicians, nurses and healthcare assistants were respectively 15.9%, 69.8%, and 14.3%. The average experience at work was 17.79 years (SD = 10.34). Mean (SD) scores for mindfulness, mature defence style, neurotic defence style, and immature defence style were 45.30 (6.83), 4.96 (1.12), 4.52 (1.37),

Table 2
Correlations between mindfulness, defence styles, depression and anxiety, demographic and professional variables.

	1	2	3	4	5	6	7	8	9	10	11
1. Age	-										
2. Gender ⁿ	.000	-									
3. Marital status ⁿ	.198	.051	-								
4. Job Position ⁿ	.007	.023	.000	-							
5. Experience	.815**	.005	.104	.040	-						
6. Mindfulness	-.043	.005	.016	.018	-.003	-					
7. DSQ Mature	.034	.002	.009	.043	.032	.786**	-				
8. DSQ Neurotic	.097	.009	.035	.025	.039	-.104	.125	-			
9. DSQ Immature	-.039	.004	.008	.010	-.034	-.853**	-.615**	.230*	-		
10. BDI	.048	.001	.025	.134	.027	-.788**	-.466**	.290*	.799**	-	
11. STAI-Y	.090	.001	.039	.028	.137	-.695**	-.526**	.068	.706**	.679**	-

Note: Pearson's coefficients were reported for association between ratio variables; Eta² measures were reported for associations between nominal variables and ratio variables; Lambda measures were reported for associations between nominal variables.

* Significant correlations $p < .05$.

** Significant correlations $p < .001$.

ⁿ Nominal variable.

and 4.31 (1.35) respectively. Depression and anxiety mean scores were 9.46 (7.27) and 40.81 (12.23) respectively, falling into the range of healthy population (Beck et al., 1988; Spielberger et al., 1983). Skewness' and Kurtosis' values analysis demonstrated that no variable had a value distribution considerably different from a normal one.

3.2. Mean differences analysis of demographic and professional variables among psychological variables

A preliminary analysis of between-groups differences in terms of demographic characteristics (age, gender, and marital status) and work-related characteristics (job position and years of experience) was performed. Results from *t*-test and ANOVA did not show any significant between-group difference consistently for all the psychological variables (i.e. defence styles, mindfulness, depression, and anxiety).

3.3. Correlational analysis

Correlations between all studied variables are presented in Table 2. Regarding defensive functioning, mature defence style had a highly significant positive correlation with mindfulness disposition ($r = 0.786$; $p < .001$), and highly significant negative correlations with immature defence style ($r = -0.615$; $p < .001$), depression ($r = -0.466$; $p < .001$), and anxiety ($r = -0.526$; $p < .001$). Neurotic defence style was associated with immature defence style ($r = 0.230$; $p < .05$) and depression ($r = 0.290$; $p < .05$), while immature defences showed positive and highly significant correlations with both depression and anxiety ($r = 0.799$; $p < .001$ and $r = 0.706$; $p < .001$ respectively) and a strong negative correlation with mindfulness ($r = -0.853$; $p < .001$). Finally, mindfulness had highly significant negative associations with both depression and anxiety ($r = -0.788$; $p < .001$ and $r = 0.695$; $p < .001$ respectively), which in turn were significantly correlated ($r = 0.679$; $p < .001$).

3.4. Hierarchical multiple regression for the depression scale

Table 3 shows the results of the hierarchical multiple regression analysis. Demographic and work-related variables were entered in the first model (Model 1) and did not result as significant predictors of depression symptoms. Model 2 included also defence styles, which explained 62.9% of the variance in the depression scale ($F = 14,151$; $p < .001$). Among the three defence styles, only immature defence style was significantly associated with depressive symptom severity ($b = 4.188$; $p < .001$). The inclusion of the mindfulness scale (Model 3) significantly increased the explained variance to 70.5% ($F = 17,491$; $p < .001$). Looking at the regression coefficients, we found that both

mature defence style, immature defence style and mindfulness were significantly associated with depression ($b = -1.920$; $p < .05$, $b = 1.849$; $p < .05$, and $b = -0.763$; $p < .001$ respectively). In the final model, higher use of immature defences, lower use of mature defences, and poor mindfulness dispositions were the best predictors of depressive symptoms severity in oncology professionals.

3.5. Hierarchical multiple regression for the anxiety scale

Similarly, hierarchical multiple regression analysis was conducted to identify predictors of anxiety in oncology professionals. Results are presented in Table 4. As for depression, demographic and work-related characteristics were entered in Model 1 and were not significantly associated with anxiety symptoms. As a further step we entered the three defence styles in the model (Model 2). Defence styles explained 48.3% of the variance in the anxiety scale ($F = 20,667$; $p < .001$), although only immature defence style ($b = 5930$; $p < .001$) was significantly associated with anxiety symptoms severity. The addition of the mindfulness scale in the third model (Model 3) did not significantly increase the explained variance, while immature defence style remained significant ($b = 4003$; $p < .05$). In the final model, the use of immature defences was the only variable independently associated with anxiety symptoms severity in oncology professionals.

4. Discussion

In the current study, we have tried to address the question of how mindfulness disposition and defence styles are related to psychological symptoms in oncology professionals. Assuming that working in oncology departments is a stressful and emotionally consuming experience (De la Fuente-Solana et al., 2017; Kintze & Rodrigues, 2008; Kutluturkan et al., 2016), we investigated whether mindfulness and defensiveness could predict the management of work-related stress in terms of depression and anxiety symptoms.

In line with previous studies that observed defence mechanisms in oncology clinicians (Bernard et al., 2012; Despland et al., 2009), demographic and professional characteristics in our sample did not show meaningful effects on any of the studied psychological variables. These findings might be related to the sample characteristics (high percentage of middle-aged women, nurses, with long experience in oncology), although these proportions are similar to other international samples (Heinen et al., 2013). Our first hypothesis of significant relations between defences and mindfulness was confirmed. In addition, the ability of being attentive and aware of present-moment experience was found to be strongly related to a mature defence style and negatively related with depression and anxiety symptoms in oncology professionals. On

Table 3
Hierarchical regression analysis of depressive symptoms' predictors.

	b	SE _b	b'	t	p	F	p	R ²	Adjusted R ²
Model 1						.395	.850	.033	-.051
Gender	.240	1.966	.016	.122	.903				
Age	.004	.162	.006	.023	.981				
Marital status	1.560	1.878	.127	.831	.410				
Job position	1.731	1.756	.132	.986	.328				
Experience	-.012	.161	-.017	-.076	.940				
Model 2						14.151	.000	.677	.629**
Gender	-.694	1.186	-.047	-.585	.561				
Age	.003	.097	.004	.031	.976				
Marital status	1.503	1.121	.122	1.340	.186				
Job position	1.344	1.072	.102	1.253	.215				
Experience	.006	.096	.008	.061	.952				
Mature d.s.	.058	.691	.009	.084	.933				
Neurotic d.s.	.599	.457	.113	1.309	.196				
Immature d.s.	4.188**	.579	.777	7.238	.000				
Model 3						17.491	.000	.748	.705**
Gender	.466	1.099	.032	.424	.424				
Age	-.056	.088	-.082	-.641	-.674				
Marital status	1.551	1.000	.126	1.551	.127				
Job position	.530	.979	.040	.542	.590				
Experience	.027	.086	.038	.310	.758				
Mature d.s.	-1.920*	.782	.295	2.456	.017				
Neurotic d.s.	.496	.408	.094	1.214	.230				
Immature d.s.	1.849*	.795	.343	2.326	.024				
Mindfulness	-.763**	.197	-.717	-3.867	.000				

Notes: Hierarchical multiple regression analysis (dependent variable - BDI depression scale). Only demographic and work-related variables were entered in model 1, DSQ defense styles was added in model 2, and MAAS mindfulness scale in model 3.
d.s. stands for defense style.

*p < .05.
**p < .001.

the other hand, immature defence style was related to psychological distress and poor mindfulness disposition confirming our hypothesis. Correlation coefficients indicated degrees of association from moderate to strong. Our second hypothesis, that mindfulness and defence

mechanisms could predict psychological distress in oncology professionals, was generally confirmed. Hierarchical multiple regression showed that higher use of immature defences, lower use of mature defences, and low mindfulness effectively predicted the severity of

Table 4
Hierarchical regression analysis of anxiety symptoms' predictors.

	b	SE _b	b'	t	p	F	p	R ²	Adjusted R ²
Model 1						.390	.854	.033	-.052
Gender	.049	3.308	.002	.015	.988				
Age	-.121	.273	-.105	-.443	.659				
Marital status	1.472	3.161	.071	.466	.643				
Job position	2.114	2.954	.096	.716	.477				
Experience	.241	.271	.203	.888	.378				
Model 2						20.667	.000	.550	.483**
Gender	-.466	2.356	-.019	-.198	.844				
Age	-.083	.192	-.072	-.430	.669				
Marital status	1.931	2.228	.093	.867	.390				
Job position	.417	2.129	.019	.194	.845				
Experience	.221	.191	.187	1.158	.252				
Mature d.s.	-1.321	1.373	-.121	-.962	.340				
Neurotic d.s.	-.666	.908	-.075	-.733	.467				
Immature d.s.	5.930**	1.149	.654	5.160	.000				
Model 3						2.085	.155	.567	.493
Gender	.489	2.427	.020	.202	.841				
Age	-.132	.194	-.115	-.680	.500				
Marital status	1.971	2.206	.095	.894	.376				
Job position	-.253	2.159	-.011	-.117	.907				
Experience	.238	.190	.202	1.258	.214				
Mature d.s.	.212	1.725	.019	.123	.902				
Neurotic d.s.	-.750	.901	-.084	-.833	.409				
Immature d.s.	4.003*	1.754	.442	2.282	.027				
Mindfulness	-.628	.435	-.351	-1.444	.155				

Notes: Hierarchical multiple regression analysis with dependent variable the STAI-Y state anxiety scale. In this analysis demographic and work-related variables were entered in model 1, DSQ defense styles in model 2, and MAAS mindfulness scale in model 3.
d.s. Is the abbreviation for defense style.

*p < .05.
**p < .001.

depressive symptoms in oncology professionals, but only immature defences were found to be an independent predictor of anxiety symptoms.

The interpretation of these findings must take into account the theoretical and operative definitions of mindfulness and defence mechanisms. Mindfulness is an attentive and aware ability of experiencing what is happening in the present moment (Brown and Ryan, 2003; Kabat-Zinn, 1994, 2005), which fosters the conscious attention to body sensations, awareness of emotional experience and unjudging thoughts. A good mindfulness practice might improve the oncology professionals' quality of life, reducing their burden and enhancing mental and physical well-being (Al Daken and Ahmad, 2018; Duarte and Pinto-Gouveia, 2016). On the other hand, defence mechanisms are unconscious ego strategies activated in response to internal or external stressors (APA, 2013; Vaillant, 1992) to help the individual in dealing with unconscious conflicts, feelings, wishes, and thoughts (Perry, 1990). Since defences are organized into a hierarchy of adaptiveness, the maturity of the subject's defence style describes the ability of dealing with distress (Andrews et al., 1993). A mature defence style allows the oncology professional to transform uncomfortable feelings, ideas and thoughts related to the caring of dying patients into less threatening forms.

Oncology professionals are often aware of the physically and emotionally consuming aspects of their job, but they might remain unaware of their own feelings associated with the care of cancer patients. They might consciously experience their frustration, fatigue, and excess load, and benefit from both conscious and unconscious mental processes for releasing the distress, as confirmed by our results. By contrast, a general sense of anxiety is often experienced – sometimes causing physical symptoms – as unlinked to work-related situations or other specific issues and may require specific psychological interventions (Moody et al., 2013; Pfaff et al., 2017). Defence mechanisms are of crucial importance in elaborating unconscious conflicts that generate anxiety. Oncology professionals with an immature defence style tend to use less adaptive defence mechanisms that obstacle the process of changing discharged affects into tolerable forms and remaining unaware of feelings, ideas and their consequences. In this perspective, defence mechanisms play a major role in protecting the self from depression and anxiety symptoms elicited by working in oncology departments, while mindfulness dispositions improve the awareness of what the person is experiencing at the moment and increase sensitivity, self-compassion, sense of peace and life-satisfaction.

These results are in line with previous studies that found psychological distress negatively associated with mindfulness disposition (Abeni et al., 2014) and with high-adaptive defence mechanisms (Di Giuseppe et al., 2019; Perry et al., 2016; Starrs et al., 2018). According to recent studies on the effectiveness of mindfulness-based interventions in reducing work-related distress (Duarte and Pinto-Gouveia, 2016; Moody et al., 2013; Pfaff et al., 2017), our results confirmed that mindfulness moderates the development of symptoms of depression in oncology professionals. Moreover, results highlighted how immature defence mechanisms increase depression and anxiety, similarly to previous findings in both clinical and healthy samples (Beddoe and Murphy, 2004; Di Giuseppe et al., 2018; Prakash et al., 2015).

Overall, the present study provides the first empirical evidence of the interaction of defence mechanisms and mindfulness dispositions in determining work-related stress responses in oncology professionals. The lack of empirical evidence about this interaction in various sample may reflect the difficulty in integrating different psychological approaches into research and practice. Future research should try to fill this gap and promote a deeper understanding of the connections between conscious and unconscious processes underlying psychological well-being in oncology nursing.

Finally, some considerations about the limitations of the study are due. The cross-sectional design limits the interpretation of the results beyond the associations between mindfulness, defence mechanisms,

and psychological symptoms. Since the conducted analyses do not imply causality, future researches might attempt to replicate these findings in randomised controlled trials and longitudinal studies. Furthermore, the sample size was relatively small and did not represent equally the three considered job positions. Studies on larger and evenly distributed samples might add significant information to the present findings. In addition, the inclusion of depression and anxiety symptoms only may be reductive, although they represent two fundamental and widely used indexes of psychological distress. Finally, the use of a convenience sample and of self-report measures may limit external validity and introduce limitations associated with the type of assessment methodology (Jackson, 2015; Perry and Ianni, 1998). Future studies should improve the exploration of the impact of defence mechanisms and mindfulness in a wider range of variables covering psychological functioning in oncology professionals. The use of clinical interviews and observer-rated assessment methods should be applied in future investigations, as well as the inclusion of control groups such as non-oncological healthcare professionals.

5. Conclusions

Despite the above-mentioned limitations, the results are meaningful for understanding the role of defences and mindfulness in preventing psychological distress in healthcare professional who work with oncologic patients. Findings highlighted the influence of defence style and mindfulness dispositions in depressive symptoms and the central role of immature defences in anxiety symptoms. Defence mechanisms and mindfulness dispositions should be screened in all oncology professionals. The early detection of poor conscious and unconscious coping skills in oncology professionals might prevent the risk of developing stress-related syndromes such as burnout and compassion fatigue (Duarte and Pinto-Gouveia, 2016; Moody et al., 2013). Since defence mechanisms and mindfulness can be improved using appropriate psychological interventions (Di Giuseppe et al., 2014), training focused on implementing defensive adaptiveness and mindfulness practice should be provided to oncology professionals in order to prevent and reduce the consequences of work-related stress.

According to the present data, mindfulness and defence mechanisms share several common-points and should be seen as interrelated aspects of psychological functioning. Further studies are needed for a deeper understanding of the interaction between mindfulness and defences in improving adaptation (Perry and Bond, 2017).

Conflicts of interest

None declared.

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