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Abstract

Perinatal loss has a strong emotional impact on health professionals working in maternity units. We aimed to study the impact of this experience on health professionals' language. We analyzed the answers of 162 health professionals (physicians and non-medical staff) who described their reactions to perinatal loss. A linguistic analysis was performed using the LIWC software. Associations between language and burnout were studied. Words typical of a psychological shock reaction were used more by non-medical staff than by physicians. Participants who used pronouns, optimistic words, future tense verbs and cognitive words registered lower levels of burnout. Clinical implications of the results are discussed.

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Introduction

Perinatal loss is a painful, tragic and devastating event which has a strong emotional impact on the parents as well as on the health professionals involved. It is a paradoxical death as it represents the overlapping of two events that should be found at the opposite side of life's timeline: birth and death. They seem to merge and become confused in a time that is difficult to understand and give meaning to. Moreover, this event happens in a place dedicated to the birth of new lives and it therefore breaks up the daily obstetric-gynecological activity (Gandino et al., 2014; Gandino et al., 2016; Kelley and Trinidad, 2012; McCreight, 2005, Pasqualetto, 2005). Even though many studies have focused on the experiences of parents, few have investigated the perspective of healthcare professionals. However, dealing with pregnancy loss is an overwhelming experience that may activate memories of past losses which, if inappropriately processed, would arouse the associated mal-adaptive sensations, emotions, beliefs and images, leading to dysfunctional responses in healthcare professionals as well. Grief is a common reaction among obstetricians, nurses and midwives after caring for a patient who has had a stillbirth (Farrow et al., 2013; Montero et al., 2011; Roehrs et al., 2008). Staff working in these settings report significant levels of subjective distress, with appraisals of the care provided and of their coping styles making staff more vulnerable (Wallbank and Robertson, 2013). The repeated exposure to perinatal death may lead healthcare professionals to hide and deny the strong emotional effects, with a high risk of

developing burnout syndrome, as well as frustration, disappointment, feelings of guilt and sadness (Defey, 1995; Gold et al., 2008; McGrath, 2011).

Furthermore, physicians and non-medical staff seem to differ in the nature of their care, focused, respectively, on technical and emotional aspects, as well as in the attention they pay to what patients express.

Some researchers have noted that healthcare professionals' wellbeing is correlated with their ability to provide support to affected parents. Increasing their knowledge of how to care, reflecting on their practice and giving voice and space to their experiences through training and supervision, allow health professionals to enhance their wellbeing and self-efficacy. This enables them to develop strategies on how to take care of the patient, improving the therapeutic alliance (Gandino et al., 2014; Gandino et al., 2016; McCreight, 2005; Rohers et al., 2008; Wallbank and Robertson, 2013).

Narrative processes allow individuals to organize their experiences to create a coherent and continuous sense of identity (Di Fini et al., 2013; McLean, 2008; Neimeyer, 2006; Rees et al., 2013; Veglia, 2013). Most of qualitative studies have examined the impact of this event on the narratives of the mother and the parental couple (Abbound, 2003; Downe et al., 2013; McCreight, 2008; Meaney et al., 2016; Rådestad et al., 2014), while few researchers have focused on nurses, midwives and obstetricians (Kain, 2013; Gandino et al., 2017; McCreight, 2005; Montero et al., 2011; Nuzum et al., 2014; Puia et al., 2013).

From a psycholinguistic perspective, the way in which people communicate emotions, thoughts and motives through their narratives can tell us how they are experiencing traumatic or important events and the role these events will have in the future (Crespo and Fernández-Lansac, 2016; Tausczik and Pennebaker, 2010). Studies have shown that how people express death-related narratives reflects both their emotional state and the way of coping with the event (Jaeger et al., 2014). However, previous death-related research mainly focuses on how subjects conceptualize their own death or the loss of a loved one. Few studies have explored the healthcare professionals' point of view by investigating their linguistic style. More specifically, this methodology is unexplored in perinatal loss research. The use of a psycholinguistic approach to study both nurses and patients could be helpful for recognizing experienced emotions in order to develop training policies for healthcare professionals.

Given these considerations, this study aimed to provide a broad description of *how* healthcare professionals narrate this experience, in terms of its impact on themselves and on the care they were providing to the parents. The second aim was to analyze the correlation between word usage and burnout level.

Therefore, we hypothesized an emotional effect on the language style of healthcare staff in the process of verbalizing experience, as well as some differences among professionals on the basis of their role in the hospital unit.

Moreover, as individual wellbeing is connected to verbal processes, we also expected to find a connection between indices of a poor elaboration of the overwhelming experience, in terms of a very emotional and absorbed linguistic style, and high burnout levels.

Method

Procedures and participants

This study is part of a broader research project conducted in 16 Italian hospitals with 485 healthcare professionals. The complete description of the original sample, the methods used to administer the tests and collect data are available in the report by the first author et al. (2014).

The participants' answers to the open-ended questions were transcribed *verbatim*. For the linguistic analysis, the transcripts were edited according to the format required by the *Linguistic Inquiry and Word Count system* (LIWC, Pennebaker et al., 2001). The LIWC is a software which compares the words of a text with an internal dictionary and computes the number of words that fall into a given category. For this study, we considered 56 of the 85 LIWC categories: 17 standard linguistic dimensions (e.g. *pronouns*), 24 word categories relating to psychological processes (e.g. *emotive, cognitive*), 15 non-psychological constructs (e.g. *leisure activities, current concerns*).

Those categories that were descriptive of text files (e.g. *text segments*) and non-word categories (e.g. *non-fluencies* and *fillers*) were excluded from the analysis.

The sample included all the healthcare professionals at the maternity units of 9 hospitals in Northern Italy. In this paper, we report the results of the linguistic analysis relating to 162 participants out of the 485 who took part in the broader study (response rate: 33.4%). The sample was composed of physicians (N = 26), nurses (N = 38), midwives (N = 80) and ward assistants (N = 18).

The average age in years of the sample was 41 (SD = 8.7). The average age of physicians was higher (44.2, SD = 8.3) than that of non-medical staff (40.42, SD = 8.7). For further details see Table I. This sample was also the subject of a narrative analysis from a semantic point of view (first author et al., 2016).

Participation was voluntary, so random sampling was not possible. However, the researchers attempted to distribute questionnaires across the professional categories within the maternity units. The participants gave their informed consent to take part in the study. They were assured that the information obtained would be treated anonymously and used only for the purpose of the study. [INSERT TABLE I HERE]

Measures

We used an *ad hoc* self-report questionnaire to record the experiences and feelings of healthcare professionals who have to deal with perinatal deaths. It was set out as follows:

- An *ad hoc* questionnaire about socio-demographic variables, the frequency of having to deal with perinatal deaths and the perceived attribution of tasks to different professions.
- The Maslach Burnout Inventory-Human Services Survey (MBI-HSS, Maslach et al., 1996) to evaluate burnout syndrome using three subscales: Emotional Exhaustion (EE), Depersonalization (DP) and Personal Accomplishment (PA). The Sirigatti and Stefanile (1991; 1993) Italian version was used.
- Three open-ended questions to investigate the healthcare professionals' narratives about their experiences:
    1. *When dealing with perinatal death, I felt… In particular, I remember an episode in which…*
    2. *After the perinatal death, I think that the baby…*
    3. *When they experience perinatal death I think the bereaved parents feel…*

Analytical strategy

Descriptive data were presented using frequencies, means and standard deviations. Considering the differences in the size of the groups, all inferential tests on the answers provided by physicians and non-medical staff were controlled by performing non-

parametric tests. Linguistic differences between physicians and non-medical staff were investigated from an exploratory perspective using the Mann-Whitney U test. In order to identify any differences in the participants' linguistic characteristics according to the time they had spent working in the maternity unit, we conducted the Kruskal-Wallis test.

The Spearman correlation coefficient was used to study the association between psycholinguistic variables and means of EE, DP and PA. Statistical analysis was performed using IBM SPSS 20 (IBM Corporation, 2011).

Results

As regards the attribution of tasks to professions from the perspective of physicians, nurses, midwives and ward assistants, the results obtained in the subsample considered (N = 162) were consistent with those of the previous study (first author et al., 2014). Physicians are asked to communicate the family of the death or inform them the results of an autopsy, while nurses, midwives and ward assistants are more involved in providing emotional support and being available to assist newly-bereaved parents.

Given the main difference between physicians and the other healthcare professions in terms of both standard and perceived tasks, we chose to maintain this division. Therefore, we also divided the participants into two groups: physicians (N = 26) and

non-medical staff (nurses, midwives and ward assistants; *N* = 136). The following results are reported according to this division.

The first aim of the study was to analyze the linguistic profile of healthcare professionals while they described their experiences of perinatal loss.

As shown in Table II, the word category most frequently used by participants was that of Affect words (*M* = 16,5; *SD* = 18,9): in particular, we registered a high level of Negative emotions (*M* = 14,5; *SD* = 18,5), such as Sadness (e.g. *grief, sad, cry*), Anxiety (e.g. *nervous, afraid, tense)* or Anger (e.g. *hate, kill*). The second most frequent category was Pronouns (*M* = 11,6; *SD* = 21,9), in particular the First person singular (e.g. *I, me, my; M* = 1,5; *SD* = 2,5). [INSERT TABLE II HERE]

As shown in Table III, physicians and non-medical staff differed significantly in their total word count (Mann-Whitney test; $p<.05$): non-medical staff used more words than physicians. Furthermore, non-medical staff used the categories Tentativeness (*e.g. perhaps, guess*), Social processes (e.g. *child, help*), Body (e.g. *ache, breast*) and Exclusion words (e.g. *but, except, without*) more frequently than physicians ($p<.05$). In particular, within the Social processes dimension they reported significantly higher levels of words relating to Family (e.g. *mom, brother, father*) and Humans (e.g. *boy, woman, group*). As regards the standard linguistic categories, physicians used Present tense verbs and Conditional verbs less frequently than non-medical staff. [INSERT TABLE III HERE]

The Kruskal-Wallis test conducted to identify differences according to the time participants had spent working in the same unit revealed a significant difference between groups in the distribution of the Anger word category (e.g. *hate, kill; p<.05*): professionals who had been working in the unit for less than five years used more words in this category than the other staff.

The second aim was to analyze the correlation between linguistic characteristics and MBI-HSS Inventory scores in order to identify the possible linguistic profile associated with burnout in human services and healthcare occupations.

The 162 participants showed no cases of burnout syndrome. The value of the variables of the MBI-HSS scale (Maslach et al., 1996) were distributed as shown in Table IV.

[INSERT TABLE IV HERE]

As shown in Table II, the MBI-HSS Inventory subscale EE was negatively associated with the number of Pronouns (*Spearman's rho* = -.190, *p<.05*) as well as some categories relating to Social processes, such as Friends (e.g. *pal, buddy, coworker*; Spearman's rho = -.212, *p<.01*), Humans (e.g. *boy, woman, group; Spearman's rho* = -.161, *p<.05*) and level of Future tense verbs (e.g. *will, might, shall*; *Spearman's rho* = -.172, *p<.05*). As expected, EE was negatively correlated with Optimism (e.g. *certainty, pride, win*; *Spearman's rho* = -.175, *p<.05*).

The MBI-HSS Inventory subscale DP was negatively associated with Cognitive processes, such as Certainties (e.g. *always, never*; *Spearman's rho* = -.160, *p<.05*) and Inhibition (e.g. *ban, keep, stop*; *Spearman's rho* = -.165, *p<.05*).

Lastly, the subscale PA was positively associated with the First person singular (e.g. *I, me, my*; *Spearman's rho* =.160, *p<.05*), Second person singular (*you, your*; *Spearman's rho* = .218, *p<.01*) and Future tense verbs (*Spearman's rho* = .211, *p<.01*). This subscale was also positively correlated with the Affect word category: in particular, Positive emotions (e.g. *happy, pretty, good*; *Spearman's rho* =.267, *p<.01*) and Optimism (e.g. *certainty, pride, win; Spearman's rho* = .200, *p<.05*). Even some Cognitive processes increased, such as Tentativeness (e.g. *perhaps, guess*; *Spearman's rho* = .163, *p<.05*) and Certainties (e.g. *always, never; Spearman's rho* = .267, *p<.01*). A high score on this subscale related to an increase in Social processes word categories, such as Friends (*Spearman's rho* = .253, *p<.01*), Family (*Spearman's rho* = .205, *p<.01*), Humans (*Spearman's rho* = .159, *p<.05*) and Communication (e.g. *talk, share, converse*; *Spearman's rho* = .170, *p<.05*), as well as Current concerns word categories, such as Occupation (e.g. *work, class, boss*; *Spearman's rho* = .251, *p<.01*).

Discussion

The first aim of this study was to identify the processes by which the event was transformed into words during the narration of significant episodes relating to perinatal

loss in the professional context. According to the first hypothesis, we also expected a strong emotional effect on healthcare staff's language style.

Indeed, as suggested by previous studies (Ben-Ezra et al., 2014; Farrow et al., 2013; Wallbank and Robertson, 2013), hospital staff are not untouched by the emotional impact that perinatal loss brings with it. The results showed that the word category used most frequently by participants was that of Negative emotions. Holmes et al. (2007) linked the use of negative emotion words to the degree of immersion in a potentially traumatic experience.

The language of hospital staff also reflected how they perceive this event and its distressing impact. Moreover, the extensive use of pronouns in general rather than nouns may refer to a shared reality and reflect the participants' level of social integration, as well as well-balanced writing (Tausczik and Pannebaker, 2010). A comparison of the language of physicians and non-medical staff in a sample of written texts revealed some differences. Present tense verbs were more likely to be used by non-medical staff than by physicians. This result might be useful for understanding how healthcare professionals process the experience: greater use of the present tense is more frequent in discussing an undisclosed event (Pasupathi, 2007). In our study, non-medical staff showed a lower level of experiential connectedness in discussing perinatal loss.

The use of Tentative language, which characterized non-medical staff's narratives, may reveal a high level of uncertainty and insecurity about the topic, associated with a lack of processing of an event and organization to create a story (Pasupathi, 2007). These characteristics are typical of a broader psychological shock reaction (Cohn et al., 2004). This result might even be explained by reflecting on the differences in the roles of these health professionals: while medical staff are required to perform technical and scientific duties in relation to patients and have a more limited contact with the mothers and their partners, non-medical staff are physically closer to the couple's emotional experiences and the traumatic impact of the event, because of the assistance and support involved.

A possible confirmation of this hypothesis may be found in the greater use of Body, Family and Human words by non-medical staff compared to physicians. The linguistic shift of focus from insight and abstract reasoning to a more concrete description of the topic may suggest that nurses, midwives and ward assistants have more difficulty in integrating upsetting information to create a coherent narrative. Some authors have suggested that the use of more abstract words and intellectualized language express a distance from the emotions involved in a traumatic experience (Beaudreau, 2007). This tendency is usually linked to lower Referential Activity levels. In fact, the avoidant strategy for coping with the trauma may impede integration of the memories and connection between thoughts and bodily sensations, as well as between the symbolic and non-symbolic levels (Bucci, 1997). In the literature, the function of a more

cognitive and intellectual language is controversial, as borne out by the different interpretations of the association with a lack of elaboration or a better adjustment (Crespo and Fernández-Lansac, 2016; D'Andrea et al., 2012).

The emotional tone inherent in language use differed with the time spent working in the maternity unit: we found that Anger words decreased as the time at the unit increased. According to the literature (Kross and Ayduk, 2008), this result may be explained through a gradual evaluation of the topic and detachment from the immediacy of the event in terms of its emotional impact. The consequence may be a progressively diminishing use of emotional words and an increase in cognitive narration (e.g. cognitive insight, causation words) used to organize participants' thoughts over time.

As regards the second hypothesis, the results of the correlation between linguistic style and MBI-HSS scores can be considered in the same direction. Indeed, we found that the use of Pronouns, Optimism words and Future tense verbs decreased as the scores on the EE subscale increased. As expected, the feeling that emotional resources are depleted and physical energies are lost would not allow hospital staff to change their perspective in dealing with an emotional upheaval, both with regard to better social integration and future time.

As Campbell and Pennebaker (2003) have shown, the shift in the use of pronouns as well as the distancing from the present perspective is correlated with improvements in health. The negative association between the DP subscale and cognitive words also

suggests the importance of cognitive evaluation, in terms of reasoning and insightfulness, to create a coherent narrative.

Conversely, we found that professional gratification and self-esteem (PA subscale) were associated with high scores in linguistic Optimism, Cognitive processes, projection to the Future and Communication motives. The perception of competence is a protective factor against burnout for healthcare professionals, who feel motivated to talk about and share their experiences, as shown by their linguistic style. In turn, a good level of social integration may be associated with the perception of being better prepared to cope with perinatal loss and grief. According to the more general literature about End-Of-Life settings (Currier et al., 2008; Holland and Neimeyer, 2005), these results suggest that practitioners who lack sufficient social integration might feel overwhelmed by the demands of their work. However, in the particular context of maternity units, working in contact with mothers can be considered a protective factor against developing burnout syndrome (first author et al., 2014).

Limitations

The current study has some critical points that should be considered. Our sample size was small and the findings may be limited in their generalizability because of the differences in the size of the groups: the majority of the sample were non-medical staff. Therefore, the findings need to be replicated in larger samples examining subgroups and

systematically comparing methods of recounting. Some limitations are related to the use of the LIWC. Word order, irony, sarcasm, and idioms are ignored by the word-by-word computation. Moreover, shifts in present tense language that may characterize the verbalizations of overwhelming experiences are not taken into account by the LIWC. At the same time it is difficult to distinguish whether the use of cognitive words is linked to organized or disorganized thoughts (Jelinek et al., 2010). These aspects may have limited the interpretation of the texts. Different tools such as the Discourse Attributes Analysis Program (DAAP, Maskit, 2011; Maskit and Murphy, 2011) and the Italian Weighted Referential Activity Dictionary (IWRAD, Mariani et al., 2013) that calculates some indices referring to specific dictionaries and analyzes the connection between emotional experience and cognitive elaboration, should be considered for the analysis. Finally, the written self-report questionnaire may have been an obstacle for participants in providing their responses: given the sensitive topics, it is likely that they may have felt more comfortable answering in an oral interview with another individual guiding and supporting them in their responses.

Conclusions

Despite the above limitations, to our knowledge, this study is the first to explore the linguistic style of written perinatal death-related narratives of healthcare professionals (physicians and non-medical staff) who, as professionals, have to cope with perinatal

loss and parents' grief. In talking about perinatal bereavement, as a paradoxical event, where death occurs in a place set up to welcome life, healthcare professionals showed a strong emotional reaction at a linguistic level. The language used revealed differences between physicians and non-medical staff in terms of processing and cognitive evaluation of the traumatic impact of the event: nurses, midwives and ward assistants, who spend a great deal of time with hospitalized women, showed more difficulty in making sense of their experiences, in being less detached from the event than physicians. The results of this study have highlighted how perinatal loss is an emotionally exhausting event for healthcare professionals who have to cope with their own painful experiences and at the same time follow the rules of good clinical practice. The scientific literature – considering the specific needs of healthcare professionals – assumes that vocational training, support and sharing with colleagues, and clinical supervision are essential tools to improve the wellbeing and optimization of the care to be provided to the bereaved parents (Chan and Arthur, 2009; Defey, 1995; Montero et al., 2011; Wallbank and Robertson, 2013; Nuzum et al., 2014; Gandino et al., 2014; Gandino et al., 2016; Gandino et al., 2017).

Some authors have suggested specific interventions and techniques to alleviate the pain and discomfort caused by loss, such as debriefing activities (Puia et al., 2013) or a mindfulness path, to help staff manage the stress caused by mourning (Farrow et al., 2013).

A better understanding of the narrative processes of these professionals could also be useful for the development of new prevention policies in healthcare environments in order to allow staff to attribute meaning to their own experiences and improve their psychological wellbeing. Through the use of personal narratives, healthcare professionals might find the opportunity to reflect on their practice, on their own emotions and experiences, and on how to take care of the patients (McCreight, 2005). Reflection on experience – through sharing and narration – is therefore the core aspect of the proposed intervention and of the needs of these professionals, who have to cope with their own traumas and provide assistance to the users as well.

In order to improve clinical practice, great attention has to be paid to the lives and wellbeing of caregivers. Indeed, healthcare professionals are involved in emotionally difficult duties: therefore, they should be trained and supported in order to provide effective support in turn.

Therefore, to better examine the dimension of the meaning-making process, future research could conduct a quali-quantitative analysis illustrating the complex interplay between narrative themes, emotional tone, cognitive complexity and social references.

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Conflict of interest

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

Human rights

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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Table I. Sociodemographics of participants

	Total (*N*=162)		Physicians		Non-medical staff	
Gender	*N*	*%*	*N*	*%*	*N*	*%*
Female	150	92.6	16	61.5	134	98.5
Male	12	7.4	10	38.5	2	1.5
Total	*162*	*100*	*26*	*100.0*	*136*	*100*
Years in maternity unit	*N*	*%*	*N*	*%*	*N*	*%*
< 5	45	27.8	6	23.1	39	28.7
5-10	45	27.8	10	38.5	35	25.7
10-15	28	17.3	4	15.4	24	17.6
15-20	8	4.9	1	3.8	7	5.1
> 20	36	22.2	5	19.2	31	22.8
Total	*162*	*100.0*	*26*	*100.0*	*136*	*100.0*

Table II. Average values of linguistic categories in all samples (N=162) and correlation with MBI-HSS scale
**= Correlation is significant at the 0.01 level (2-tailed);
*= Correlation is significant at the 0.05 level (2-tailed).

	LIWC Linguistic Categories			Burnout		
Category	*Examples*	*M*	*SD*	EE	DP	PA
Word count	-	37.2	44.9			
Affect	*careless, fear, happy, sad*	16.5	18.9			
Negative emotion	*bad, cry, grief*	14.5	18.5			
Anxiety	*fear, impatient, stress*	8.0	14.0			
Sadness	*cry, grave, miss*	7.9	12.7			
Positive feelings	*happy, joy*	4.9	11.9			
Anger	*angry, nag, obnoxious*	3.9	10.0			
Positive emotion	*accept, glad, relax*	0.8	1.7			.267**
Optimism	*certainty, pride, win*	0.5	1.4	-.175*		.200*
Pronouns	*anybody, myself, someone*	11.6	21.9	-.190*		
I	*I, I'll, I'm, mine*	1.5	2.5			.160*
We	*Let's, our, we*	0.3	1.2			
Self	*myself, yourself*	0.4	1.2			
Other	*other, another*	0.3	1.1			
You	*you, you'll, yours*	0.06	0.4			.218**
Prepositions	*on, to, from*	8.9	6.2			
Cognitive processes	*affect, hope, think*	7.1	1.6		.176*	
Certainties	*absolute, always, never*	1.7	8.8	-.179*	-.160*	.267**
Insight	*think, know*	2.9	4.5			
Discrepancy	*besides, if, rather*	1.6	3.9			
Causation	*because, how, depending*	1.2	3.0			
Tentativeness	*perhaps, guess*	1.1	2.1			.163*
Inhibition	*block, reserved, stop*	0.3	0.9		-.165*	
Articles	*a, an, the*	5.5	5.5			
Negations	*can't, don't, shouldn't*	4.1	11.8			
Social processes	*child, help, love*	3.1	4.5			
Communication	*talk, share, express*	1.7	2.9			.170*
Family	*family, mum, dad*	0.8	2.1			.205**
Humans	*boy, woman, group*	0.7	1.3	-.161*		.159*
Friends	*friend, honey*	0.1	0.6	-.212**	-.180*	.253**
Physical functions	*physical, corporeal*	2.8	4.9			
Body	*arm, face, pulse*	3.0	4.9			
Sex	*erotic, nude, sex*	0.5	1.6			
Health	*doctor, heal, physician*	0.1	0.3			
Exclusion words	*but, except, versus*	2.1	3.1		-.183*	
Time	*early, hour, today*	2.1	8.1			
Present	*am, become, is*	5.1	5.0			
Past	*did, gone, used*	1.7	2.8			
Future	*he'll, ought, shall*	0.8	2.2	-.172*		.211**
Sensations	*feeling, hearing, seeing*	1.1	2.7			
Hear	*say, listen, noisy, yell*	0.3	1.2			
Feel	*feel, hard, hot*	0.2	1.4			
See	*look, saw, view*	0.2	0.8			
Current concerns	*work, class, boss*	1.0	1.8			.164*
Occupation	*busy, profession, work*	0.1	0.6			.251**
School	*student, classroom*	0.1	0.6			
Metaphysical	*death, god*	0.9	2.0			
Motion	*act, came, fly*	0.9	1.8		-.162*	-.158*
Space	*around, near, on*	0.9	3.1			
Conditional	*if, maybe*	0.7	1.4		-.160*	
Death	*autopsy, died, mortal*	0.7	1.7			
Inclusive words	*add, both, open*	0.5	1.3			

Religion	*angel, hope, pray*	0.5	1.4	
Assent	*okay, yes, agree*	0.4	1.6	-.232**
Leisure	*art, movie, play*	0.4	1.1	
Home	*bed, home, room*	0.3	0.9	

Table III. Mann-Whitney U Test Scores on variations in psycholinguistic categories between physicians and non-medical staff

			Mean rank	
	Mann-Whitney U	*Z*	Physician (*N*=26)	Non-medical staff (*N*=136)
Word count	1338.5	*-1.96	64.9	84.7
Tentative	1396.5	*-1.99	67.2	84.2
Social processes	1361	*-2.00	65.9	84.5
Family	1408	*-2.17	67.7	84.2
Human	1380	*-2.24	66.6	84.4
Present	1244.5	*-2.43	61.4	85.4
Exclusion words	1131.5	*-3.17	57.0	86.2
Body	1318	*-2.16	66.3	84.8
Conditional	1292.5	*-2.80	63.2	85.0

Note: *= *p<0.05*

Table IV. Burnout dimensions from MBI-HSS

	Total (*N*=162)		Physicians		Non-medical staff	
Burnout Dimensions	*mean*	*sd*	*mean*	*sd*	*mean*	*sd*
Emotional Exhaustion	14.5	9.2	16.2	8.8	14.2	9.3
Depersonalization	3.6	4.3	5.3	4.9	3.3	4.1
Personal Accomplishment	34.0	12.3	33.0	11.4	34.2	12.5