Burnout and Oncology: an irreparable paradigm or a manageable condition? Prevention strategies to reduce Burnout in Oncology Health Care Professionals

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Abstract. *Background:* Burnout is a stress-induced occupational related syndrome, characterized by Emotional Exhaustion (EE), feeling of depersonalization (DP) and low sense of professional accomplishment (PA). The aim of this study is to analyse the effectiveness of interventions in decreasing health professionals Burnout as well as work and life-style risk factors. *Methods:* A survey in Medical Oncology Department in the University Hospital of Parma was conducted using the validated Maslach Burnout Inventory (MBI) and two additional questionnaires exploring lifestyle and work factors. An 8-months intervention involved fortnight meetings by facilitators, incorporated elements of reflection, shared experiences and managing emotions. Six months after the end of the intervention a second survey was performed among the participants using MBI and the same questionnaires mentioned above. *Results:* EE resulted the most problematic score in Day Hospital: after the 8-month intervention we described a significant decreasing in EE score especially for Day Hospital operators (from 16.7 to 10.9) and a considerable reduction in DP score. In the Oncology Ward a correlation between lack of collaboration among different health categories and DE score was detected; in the Day Hospital the absence of solid working teams was related to higher EE scores. Conclusion: The Oncology professional health care personnel are at the greatest risk of Burnout. Our study in Oncology Department shows that specific intervention should be used to prevent and reduce Burnout. Effective personal health care strategies should be incorporated into routine oncology care to prevent and treat Burnout.

Key words: Burnout, Oncology, Prevention, Risk factors

Introduction

Burnout was originally described in the mid-1970 by psychologist Herbet Freunderberger as a condition that occurs when work and personal life pressure overcome the ability to face up, evolving into severe mental and physical distress (1).

Actually, burnout is defined as an occupational-related syndrome characterized by emotional exhaustion, cynicism, depersonalization and loss of purpose of meaning in work (2).

Burnout syndrome can occur in all professional categories, but it is mostly identified in healthcare providers and commonly affect medical oncologists: emotional issues relating to death, delivering bad news, communication with patients about life changing treatment decision, highly demanding tasks of dealing, are some of the challenges that may predispose them to burnout (3-11).

Many studies conducted in the past years have reported impressing data: from 20% to 70 % of practising oncologists worldwide experienced symptoms associated with Burnout (12).

Two recent meta-analysis involving approximately 9000 oncologists showed that they experienced high levels of burnout (EE 32%, DP 24% and PA 37%), 27% had psychiatric morbidity (depression, insomnia, anxiety) 69% felt stressed at work, 30% used alcohol in problematic ways (13 -14).

A survey on Burnout in European Young Oncologist highlighted burnout rate of 71 % (15)

Another Italian research evaluating the prevalence of burnout and psychiatric disorders among Haemato-oncology healthcare professionals indicate high level of EE and DP in almost 30 % of the physician and nurses: a low level of PA was described in 12,4 % of the physician and 15.3 %of the nurses (16).

Emotional and physical exhaustion have consequences on the physician's professionalism, his own care and safety and causes symptoms such as anxiety, mood swings, insomnia, sense of failure, depression and drug addiction (17).

The condition of Burnout has both personal and professional consequences: medical errors, professional misconduct, departure from the oncology profession (18-19).

Global incidence of burnout was drastically increased in Europe, United States and Australia; recent data shows a 50 % prevalence of burnout among medical oncologists over the world (20-21).

To detect burnout, most of the studies in the literature used the Maslach Burnout Inventory (MBI).

There has been recognition of several risk factors for burnout: younger age (age < 55), female, few years of practice (< 5 years), being nulliparous, long time contact with patients, terminal patients' care, high workload, uncertain job future (22-23).

The aim of this study is to analyse the effectiveness of interventions in decreasing health professionals Burnout (detected with MBI) of the Oncology Department; a 10% decrease in Burnout perception in almost one subscale will be considered effective.

We also investigated individual, social, relational and organizational risk factors potentially related to Burnout development, also focusing on differences between two distinct Oncology Units (Recovery Ward and Day Hospital) and health professional categories.

Methods

Our study consisted in 3 distinct Phases:
- we first retrospectively collected data and analysed baseline condition of burnout using questionnaires and focus group instrument.
- after the analysis we started the prospective study: we hypothesised to reduce burnout through tailored interventions
- Six months after the end of the intervention, a second survey was performed among the participants using the same questionnaires.

We also analysed separately Day Hospital and Oncology Ward data because of patients' different turnover; in the Oncology Recovery Ward patients have been hospitalized for few days/weeks, they often presented worse clinical conditions needing a different kind of medical approach. In Day Hospital there was a daily patients' access for short therapies and visits.

Questionnaires

From April to July 2017 a preliminary survey on Burnout status was conducted among Healthcare professionals (medical doctors, nurses, socio-sanitary assistant, biologists, support and administrative staff) in the Oncology Department of University Hospital of Parma: medical doctors, nurses and socio-sanitary assistant were totally clinically involved with cancer patients; biologist support and administrative staff played a different role in patient care pathway, in receiving patients at desk office and delivering baseline informations.

All the operators had to complete the Maslach Burnout Inventory (Italian version-Siringatti Stefanile): it is a 22-item self-completed questionnaire based on three subscales:
- Emotional Exhaustion (EE): defined as lack of one's emotional resources, with feeling of apathy
- Depersonalization (DP): characterized by detachment, irritation coldness and hardness
- Reduced Personal Accomplishment (PA) referring to feeling of competence, productivity about one's work.

The participant had reply to each question on the basis of a Likert scale measuring the frequency of the

events over time (from 0: never to 6: every day). These subscales are divided into "high", "average" or "low", according to cut off scores based on normative data (Supplementary Table S1). Score is considered high if it is in the upper third of the normative distribution, average if it is in the middle one, low if it is in the lower third .For EE and DP subscales, higher scores describe more critical situation. The PA dimension has an opposite meaning: lower scores reveal worse outcome.

Burnout status was further evaluated with focus groups: our facilitators, with specific expertise in communication and coaching, organized short meetings among different health professional categories.

In June 2017 a total of 87 operators worked at the Oncology department (Supplementary Table S2): MBI was hand delivered by researchers to health operators with time limits of three weeks: only 50 questionnaires were completed in totally anonymity, 25 from the Day Hospital and 25 from the Oncology Ward; we assume that no responder operators were not interested neither in our survey nor in our intervention.

The analysis of those preliminary results showed a high rate on Burnout status especially for Oncology ward operators (Supplementary Tables S3, S4).

The analysis of the focus groups, realized using the narrative synthesis technique, showed some critical requirements:

1. to face the theme of death, especially the global fear of death which belongs not only to patients and relatives, but extended also to health operators: the feeling of powerlessness which grips the operators in face of an event death, which is sometimes difficult to manage;
2. to deal with pain and human suffering;
1. to improve emotion understanding: it is sometimes very difficult to listen deeply enough to a patient's concern, suffering and anxiety: it is crucial to find the right distance in the relationship with patients and their relatives;
2. to dissolve feelings of guilt when the operators treat young people;
3. not to bring feelings and emotional distress into their private lives: it is fundamental to be able to have time to recharge one's own resources, to develop adaptive reserves;

4. to build a working team for enhanced cooperation between different operators;
5. to share personal experience from medical practice with colleagues in effort to reduce professional isolation;
6. to enhance a more efficient rules system with the aim to improve general organization models.

We designed our intervention with the aim to face each topic, dividing in four distinct modules, described below. We recruited 28 participants among medical doctors, nurses, socio-sanitary assistant, biologists, support and administrative staff.

Two weeks before the beginning of the intervention all the participants completed the following questionnaires:

- Maslach Burnout Inventory
- B-C Working Fit (Supplementary Appendix S1): it is a screening instrument realized specifically for the study. The items were derived from literature and focus groups analysis: it consists of 12 questions designed to investigate social and organizational welfare. Each item is thus marked from 0, for the answer absolutely not appropriate, to 3, very appropriate.
- Socio demographic questionnaire (Supplementary Appendix S2): in which we screened participants for gender, age, residence, civil status, work categories, years of occupation in the Oncology Department.

Six months after the end of the intervention a second survey with the same questionnaires was conducted to assess any changes from baseline condition. The questionnaires were examined and processed in anonymity (an alfa numeric code was assigned to each questionnaire).

Statistical analysis

On the basis of recent literature data (12), we decided to consider statistically significant a 10 % of Burnout reduction in almost one subscale with a p value < 0.05 in an estimated 30 professional health care participant.

We described socio demographic and organisational variables on Burnout with multiple regression models.

Given the non-normal distribution of the data (Kolmogorov-Smirnov test) the Wilcoxon signed rank test

was used to compare different groups. Analyses were performed using SPSS 23 for Windows.

Intervention

The intervention started at November 2107 and ended in June 2018.

It consisted in 3-hour meetings occurring once every two weeks: the formation staff consisted of two trainers with almost twenty years' experience in team building, communication strategies and emotional management (they were always both present in every meeting).

Topics addressed during the sessions were organized into 4 modules:

1 *Specific training focused on personal work experience and relationship between colleagues in each department*
2 *Individual counselling*
3 *Emotion management laboratory (residential course)*
4 *Self-Help Groups activation*

Each session followed different structures

1. *The first session* consisted of 14 facilitated biweekly meetings, where participants shared individual ideas and experiences; frontal sessions and groups exercitations were also performed.

The aim of this first form is so described:
- to improve the management of psychological aspects in helping relationships;
- to stimulate participants to talk about emotions and ideas involving death, in order to reach a balancing personal condition;
- to help participants in the general care of patient's end of life, also offering strategies to face;
  interactions with the patient's relatives;
- to allow a successful conflict management in work groups building and to describe relational dynamics in each team.

The structure of the first modules was so articulated:
- two meetings focused on self-awareness; the effect of one's own behaviour on the working environment was also analysed;
- one encounter was dedicated to aspects of communication;
- interpersonal relationship was discussed in one meet-

ing, where active listening and feedback techniques were also described;
- three meetings were dedicated to teamwork and conflict management;
- how to overcome "Helping relationship" problems was the topic of 2 meetings: in particular the theme of the right distance from patients and familiars was underlined;
- emotional management: the identification of, and acknowledgement not only of one's own, but also the other's emotional state and therefore how to elaborate and use them, was the argument of one meeting;
- one meeting was dedicated to the theme of death: in particular it was focused on the daily difficulty in accepting separation and death;
- aiding the dying: these were the arguments of two meetings that analysed the individual and relational complexity of the end of life management;
- one meeting focused on relationships with family members, giving general advice on possible behaviours.

2. *Individual counselling*

Each participant could enjoy three individual encounters.

They were based on recognition of the participant's resources as a successful strategy to face all sorts of problems.

The aim was to encourage self-awareness and to promotes one's own autonomy in decision making.

3. *Relational workshop on emotional management:*

It was a 24 hours/day course for two consecutive days: there were two sessions and not more than 15 participants for each session were allowed.

In order to avoid any external influence, the workshop took place in a Hermitage at Lake Garda: all participants were hosted during the two days course.

The purpose was understanding one's own emotions, in order to keep in touch with them.

4. *Self-Help groups activation*

Self Help groups consisted of people who shared the same experiences and difficulties: with the assistance of the trainers, they worked on finding out strategies together to solve critical situations.

The aim of Self-Help groups could be summarised in four steps:
- to help participants express their emotions freely;
- to improve one's capacity to reflect on his/her own behaviour;
- to enhance individual skills in solving problems;
- to improve self-esteem.

During the Interventional program, the Oncology department asked for Self-Help groups activation: a tragic event occurred in the Hospital and almost all the health care operators were upset:

Self-Help groups activation took place once a week for three consecutive weeks.

Results

Most of the 28 participants were women, 41 to 50 years of age, married with children and with twenty or more years' service: 29,4% were nurses and 23,5% were medical doctors (**Supplementary Figure S1 A-C).**

Post Intervention survey

Of the 28 participants, 9 had discontinued the educational program: among the drop out group statistical analysis revealed high prevalence of EE, average score of DP and equal prevalence in low/average score of Reduced PA.

Among the intervention group post intervention analysis (Wilcoxon test) did not revealed any difference in DP and PA from T0 but a sensible reduction in EE score, not statistically significant, was described.

The percentage of participants with low level of EE increased from 29,4% to 52,9%: as a consequence, operators with high level of EE decreased 17,6% to 5,9%.

The prevalence of people with average DP did not change after the intervention, whereas a sensible decrease in participants with appropriate PA was described.

We divided the participants according to different Oncology Units to find out any differences in educational program's participation (Wilcoxon test) and in Burnout Syndrome (Mann-Whitney test): the poor sample size makes it difficult to find out any statistical significance, more so, with no parametric tests.

Before the intervention no differences in EE among Units was detected; they both had average levels, even if the Oncology Ward reached the Highest score.

After the intervention we described a decreased in EE for Day Hospital (from 16,7% to 10.9%), whereas no change in Oncology Department was detected.

DP dimension did not change, and it stayed at low levels in both Units.

In the Oncology Ward, we described lower personal accomplishment without positive effects derived from the intervention.

We can conclude that the day hospital professionals have had the greatest benefit from the intervention, both for decreasing levels of high EE and for increased levels of personal accomplishment.

We also detected a relationship between EE and DP, especially in the Oncology Ward: in the Day Hospital a sensible correlation between higher DP and reduced PA was described.

Total participants sample

We found a global negative evaluation for working environment, but we described a dramatic improvement after the intervention.

The results relating to the area of cooperation showed better collaboration among different categories operators after the intervention.

We did not observe any differences related to workload distribution, individual free time and organisational model: only a little improvement in patients related organisational model was achieved after intervention.

We analysed separately BC working Fit questionnaires results from the Day Hospital and from the Oncology Ward.

The judgment about work environment is negative mainly in Day Hospital.

After the intervention the perception was positive, especially for the Day Hospital.

In the collaborative–communication ITEM in Departments we described at T0 worse communication and collaboration between different categories: this item improved after intervention.

We didn't note any substantial difference related to workload distribution, individual free time and organisational model between different departments; however, after the intervention in Day Hospital we detected a sensible improvement in organizational model related to patients care.

We described a strong relationship between Burnout and collaboration aspect: better cooperation is associated to lower EE and enhanced PA.

Because of the low number of participants, it was not possible to correlate Burnout Syndrome with socio-demographical categories (X not applicable).

We only described between nurses and OSS persistent lower PA after the interventions.

Discussion

Burnout is reaching epidemic proportions across medicine: the field of Health Care Professionals has a high risk for Burnout which is related to the nature of the work.

In our study we have described Burnout in oncology Health Care Professionals, evaluating whether an 8-month intervention is an effective way to reduce and prevent Burnout.

Baseline conditions showed, in line to literature data, that more than half participants experienced high grade of EE and DP.

Day Hospital professionals have had the greatest benefit from the intervention, both by the decreasing levels of high EE and by increasing levels of PA.

Specifically, in EE dimension we obtained a dramatic reduction of participant percentage with high EE score (from 17.6% at T0 to 5.9% at T1) together with a contextual increase of participant percentage with low EE score (from 29.4 % at T0 to 52.9% at T1). Our results did not reach statistical significance due the limited sample size, but a clear trend towards EE improvement was apparent.

We have also detected a relationship between EE and DP, especially in Oncology Ward, while in Day Hospital a sensible correlation between higher DP and reduced PA has been described.

DP dimension has not changed and stayed at low levels in both Units.

In the Oncology Ward we have described lower personal accomplishment without any positive effect derived from the intervention: this should be probably due to a dramatic emotional demand related to intensified contact with patient's suffering and death.

The results relating to the area of cooperation have shown higher collaboration among different categories of operators after the intervention.

Moreover, in our study we found out that better cooperation represents a fundamental aspect in Burnout prevention.

A recent meta-analysis showed that mainly EE and DP domains are more responsive to target interventions, while only few studies reported a significant reduction in all Burnout domain scores (24). Literature data did not show which intervention should be the best to address Burnout, taking into account both individual-focused and structural/organizational strategies.

In our study we addressed to 4 specific topics: the aspect of collaboration, since we believe that sharing experience (not only advices for challenging cases) might be a strong link to make health care professionals feel not disconnected from each other.

Individual counselling could be a significant therapeutic tool in particular situations, specifically when enhancement of one's own resources is needed.

Emotional management was another important topic: sometimes it could be very difficult to connect with suffering emotions; time to reorder them could be a useful strategy to deal with further emotional stressful situations.

In Self group activation the growth of the group represented the main goal: this is the reason why we encouraged this particular activity which has been effective in some critical cases.

We also experienced how structural intervention and optimization of the practice environment should be another important focus to promote physician well-being.

One June 2018 Day Hospital department moved to new and more comfortable location; this condition could explain the improvement evaluation for working environment after the intervention.

We are acknowledged that the major limitation of our study is represented by the relatively limited sample

size which prevents any statistically significant result; no control group also limited the evaluation of the intervention effectiveness. On the other hand, this could be due to the organizational and logistic difficulties as well as the poor compliance of the heath care personnel.

Our results highlighted how much targeted interventions could be effective in reducing some Burnout domain scores; additionally, we assessed medium/long term effects, considering that post intervention survey was conducted six months after the end of the intervention.

The lack of apparent benefit at the Oncology Ward was/is probably related to a more critical and difficult distress condition, potentially requiring intensified facilitated meetings where a continuous sharing of individual experiences are allowed and encouraged. In this setting further researches are needed to define the optimal implementation of future interventions.

We elucidated that EE and PA are the most critical domains which should be addressed by specific interventions; furthermore our integrated approaches were also effective in enhancing collaboration between colleagues.

Conclusion

Burnout negatively affects the lives of Health Care Professionals, patients and health care organizations in many aspects: medical absenteeism, increased staff turnover, risk of medical errors, suboptimal patient care; professional satisfaction is crucial not only for physician quality of life and patients care, but also for the health organization where physicians work.

Risk factors for Burnout are both individual and organizational: females, younger and unmarried / single doctors are at higher risks.

Organizational risk factors include extended work hours, increased occupational demands, increased use of electronic medical records, unclear job prospects.

It is very difficult to recognize Burnout: every clinician can experience frustration, irritability and exasperation; the key to detect Burnout is to evaluate how often the these symptoms occur.

When Burnout status is recognized, target strategies are required.

Our intervention was not able to change overall Burnout in each domain, but we experienced dramatic reduction in high degree of EE, mainly in Day Hospital.

In our study all the operators should have been involved in order to obtain more relevant results.

We strongly believe that effective strategies to prevent and to treat Burnout should be integrated into oncology care.

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APPENDIX

Supplementary Table S1. Italian version cut off for health care professionals (Siringatti /Stefanile).

	Low	Average	High
EE	£ 14	15-23	≥ 24
DP	£ 3	4-9	≥ 9
Reduced PA	≥ 37	30-36	£ 29

Supplementary Table S2. Oncology Staff

	DH	Department	TOTAL
Medical doctors	13	3	16
Residents	6	2	8
Biologists	4	0	4
Biologists technicians	2	0	2
Data manager	4	0	4
Secretaries	2	0	2
Nurse	18	14	32
Head Nurse	1	1	2
Sanitary assistant	3	6	9
Auxiliary staff	4	0	4
Biology fellows	2	0	2
Admissions nurses	2	0	2
TOTAL STAFF	**61**	**26**	**87**

Supplementary Table S3. MBI RESULTS (Department)

									M.B.I.																	Mean
EE	35	33	12	29	43	41	37	1	24	16	24	45	32	20	16	25	37	26	36	32	34	27	25	39	23	**28**
DEP	17	0	0	15	20	8	9	6	3	6	7	17	7	3	4	7	6	10	4	14	22	4	5	15	1	**8**
PA	39	37	42	26	45	32	32	42	43	39	34	29	38	40	40	35	29	44	33	33	23	44	23	25	28	**35**

Supplementary Table S4. MBI RESULTS (Day Hospital)

									MBI DH														Mean
EE	16	15	39	24	21	32	23	4	18	12	12	13	9	13	34	36	40	7	18	46	13	10	**21**
DEP	3	9	6	26	1	9	5	8	2	7	2	1	6	1	5	6	18	0	4	10	16	8	**7**
PA	44	41	30	42	43	32	40	33	36	41	45	20	39	37	6	34	32	48	35	30	41	42	**36**

Supplementary Appendix S1. B-C WorKing - FIT

1-How do you perceive general conditions of your work environment about the following issues:

   -Cleaning –lighting- temperature- quietness- building conditions

   -Pleasantness of the environment and furniture

   -Available space for person

   -Services bathrooms and changing rooms

2- How do you perceive collaborative relationships with colleagues?

   2.1 Same working class

   2.2 Different working class

3-How do you perceive communication with colleagues?

   3.1 Same working class

   3.2 Different working class

4- How do you think about workload distribution in your working group?

5-How do you perceive relationship between time spent at work and personal time?

6-How do you consider the present organizational model relative to patient's requirement?

7- How do you consider the present organizational model regarding to your daily work?

Answers: 4-point LIKERT-SCALE

0: absolutely not appropriate

1: nearly appropriate

2: appropriate

3: very appropriate

Supplementary Appendix S2. Socio-Graphic data

Gender:			
M		F	
Age:			
25-30	31-40	41-50	51-59 besides
Residency *(km from place of work):*			
0-10km	11-30km	31-50km	besides 50km
Marital status:			
unmarried/single	married	engaged	separated\divorced
Children:			
yes		no	
Working Class:			
medical doctors, residents, biologists, sanitary assistant, auxiliary staff, administrative staff others			
Years of service:			
0-5	6-10	11-20	21-34