EMOTIONAL EFFECTS OF NEGATIVE TV NEWS DEPEND ON BURNOUT

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Title: State Anxiety, Mood, and Emotional Effects of Negative TV News Depend on Burnout

Abstract

In this study we discuss the impact of negative TV news based on the viewers' burnout. We conducted 3 (burnout level: unformed, under development, and formed) x 3 (state anxiety, mood, and emotions) within-subject experiment. We measured state anxiety and mood with a questionnaire on a pre-to-post basis to find out changes due to viewing negative TV news. Besides, we employed Facial Actions Coding System to assess emotions during viewing based on facial reactions analysis. Overall, 47 healthy volunteers (19 male and 28 female university students), aged 17 to 23 years old, participated in the study. We found the most significant impact of negative TV news in the group of participants whose burnout level was under development. Exposure to negative TV news elicited state anxiety pre-to-post change only in this group ($p > .05$). Mood worsened in all burnout groups. Negative TV news reports elicited mainly fear and anger that covered over 75 % of all facial reactions. In addition, contempt and surprise decreased with the development of burnout. However, emotions elicited by negative TV news did not vary greatly between burnout groups. Consequently, among the participants without symptoms of burnout or those with fully formed burnout, we detected weaker impact of negative TV news.

Keywords: State anxiety, mood, TV news, burnout, facial reaction, emotion

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Abstract

In this study we discuss the impact of negative TV news based on the viewers' burnout. We conducted 3 (burnout level: unformed, under development, and formed) x 3 (state anxiety, mood, and emotions) within-subject experiment. We measured state anxiety and mood on a pre-to-post basis to find out changes due to viewing negative TV news. Besides, we assessed emotions during viewing based on facial reactions analysis. Overall, 47 healthy volunteers (19 male and 28 female university students), aged 17 to 23 years old, participated in the study. We found the most significant impact of negative TV news in the group of participants whose burnout level was under development. Exposure to negative TV news elicited state anxiety pre-to-post change only in this group ($p > .05$). Mood worsened in all burnout groups. Negative TV news reports elicited mainly fear and anger that covered over 75 % of all facial reactions.

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Introduction

Negative scenes transmitted on TV may lead to psychological problems. The reports on violence and crime, as well as nonviolent news reports—on natural or artificial, deadly or accidental incidents, such as car accidents—strongly permeate our lives. Media violence and its impact on antisocial behavior of audience are a major focus of media effects research. We regard the negative TV news reports as those comprising violent messages, as well as TV messages of nonviolent nature but still reporting on markedly negative events or trends. Although negativeness of the news message may be highly subjective, negative news, or more commonly, bad news, are defined as stories with particularly negative overtones, such as conflict or tragedy (Harcup & O’Neil, 2017). Generally, it is believed that negative or bad news reports occupy the majority of airspace in a typical TV newscast. Several studies confirmed this belief. Haskins, Miller, & Quarles (1984) based on their study of TV newscasts for 3 months, reported that 60% TV news items might be regarded as negative. Johnson (1996) investigated the type of news broadcasted on four TV channels for 6 months, involving more than one hundred TV newscasts. As a result, more than a half of all TV news stories—53.4%—were dedicated to violence, conflict, and suffering.

Theoretical foundations

At present, the dominant theoretical framework to examine emotional media effects is appraisal approach. It encompasses a variety of theories and models, postulates primary role of cognitive assessment (“appraisal”) in the formation of emotion, launching specific physiological, behavioral, and other changes that encompass the resultant emotional state (Roseman & Smith, 2001).

In this study we rely upon the Component Process Model (CPM) of emotion proposed by Scherer (e.g., 2001, 2005) as a theoretical basis. Scherer conceptualized emotion as “an episode of interrelated, synchronized changes in the states of all or most of the five organismic subsystems in response to the evaluation of external or internal stimulus event as relevant to major concerns of the organism” (Scherer, 2001, p. 93). In addition, according to this model, there are five subsystems of emotional response: (1) cognitive appraisal, (2) physiological arousal, (3) motoric, mostly facial reactions, (4) subjective feeling, and (5)

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motivation. Contrary to most appraisal theories, the CPM allows for the continuous nature of emotion. Individual assessment of the stimuli takes place constantly through a series of stimulus evaluation checks (SECs) regarding relevance and implications.

Scherer (1998) claims that emotions induced by media exposure differ in some aspects from naturally occurring emotions. There are several reasons for this: (1) events conveyed by mass media are of concern for a multitude of persons, (2) the relevance of such events may be of a more general nature than would be the case with a personal experience, (3) events conveyed by mass media often do not refer to individual goals but reflect culturally shared goals, norms, or values (Unz et al., 2008, p. 142).

Accordingly, we conducted this study using Scherer's appraisal model. We addressed two components of the affective system as it reacts to negative TV news in persons with different burnout levels. The goal of the study is to provide further understanding of emotional media effects of TV news, depending on burnout.

Though there is huge body of research examining distinctly fear, or anxiety, or mood changes, or positive / negative affect due to mainly violence in the media, there is a strong shortfall in research on complex emotional response, as well as on differential emotions as a reaction to negative TV news (which contain not only violence, but also reports on nonviolent events). Theory of differential emotions (Izard, 2004) regards emotions as principal determinants of behavior, as the most important motivational system of the organism. Another meaningful focus of this theory lies in the necessity to separately consider different emotions, acknowledging, though, intricate emotional blends.

Another theoretical pillar that we base upon is Mood Management Theory, proposed by Zillmann (1988). Its principal guideline is the following: "Consumption of messages—entertaining messages in particular—is capable of altering prevailing mood states, and that the selection of specific messages for consumption often serves the regulation of mood states." Inherently, TV news messages, as well as sport programs and erotic films elicit the strongest emotional engagement levels, compared to other types of media message: documentaries, dramas, and comedies that usually are not perceived as real (Winterhoff-Spurk, 2004, p. 84). And according to Frijda's (2007) "law of apparent reality", "emotions are primarily evaluated as real, which is why one expects that emotional effects should be stronger when watching nonfictional genres such as TV news." (Unz et al., 2008: Frijda, 2007).

Johnston & Davey (1997) found out that exposure to negatively valenced TV news enhances both anxious and sad mood and significantly increases the predisposition to

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catastrophize a personal worry. Besides, authors argue that negatively valenced TV news can exacerbate personal concerns that are not closely relevant to the content of the program. McNaughton-Cassil, investigating the impact of TV news on anxiety and stress in viewers, demonstrated that exposure to TV news was predictive of trait anxiety at low levels of optimism. However, media exposure, as such, didn't evoke depression (McNaughton-Cassil, 2001).

Biswas, Riffe, & Zillmann (1994) examined mood-specific preferences for bad or good TV news. Another thought-provoking study of TV news' impact on depressed individuals revealed that news content tends to exacerbate depressive mood, though, in the meantime, TV served viewers as a way to escape from depression (Potts & Sanchez, 1994).

Pearce & Field (2016) made a meta-analysis quantifying the impact of scary TV and film on children's internalizing emotions (fear, anxiety, sadness, and sleep problems). As a result, such content produced relatively small aggregated effect on internalizing emotions of $r = .18$. Interestingly, children under 10 were more susceptible to scary TV than those above the age of 10.

Madan (2012) showed that viewers of violent TV messages show greater increase in state anxiety than those who watched nonviolent clips. Besides, pre-viewing real-life violence exposure moderated the relationship between media violence exposure and physiological reactions. I.e., individuals previously exposed to high levels of real-life violence reacted more intensely than those exposed to low levels of violence.

In general, we consider exposure to negative TV news stories as an *independent variable*, state anxiety, mood and emotional reactions as *dependent variables*. On the other hand, we define burnout levels as an *additional variable* in the process of perceiving and reacting to TV news stories.

The core interest of this study is presented in the following.

RQ1: Does burnout influences effects of negative TV news on state anxiety, mood, and emotions?

Burnout usually results from long-term stress at work. Potter et al. regards burnout as an accumulation of job-related stress (Potter et al., 2010). It especially refers to working activities and overloads in so-called "helping professions" (Freudenberger, 1974). However, later symptoms of burnout were observed not only in doctors, teachers or police officers, but also in high-school students, mainly medical (Acharya, 2003; Meier & Schmeck, 1985; Salmela-Aro et al., 2009; Schaufeli et al., 2002; Yang, 2004), psychology students (Vasheka

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& Author, 2011; Author, Vasheka, & Dolgova, 2013; Author, Vasheka, & Zyma, 2013). A growing body of research indicates that burnout is very similar to depression. Bianchi, Schonfeld, & Laurent (2014) showed that about 90% of workers with fully formed burnout meet diagnostic criteria for depression.

Inventories of Maslach and Boyko provide principal methodologies to quantify extent of experienced burnout. Maslach regards burnout as a process and an individual as experiencing one of its stages. Instead, Boyko looks at burnout as a syndrome that consists of several symptoms. These are the chief differences between both burnout tests. In this study we applied Boyko Syndrome of Emotional Burnout Inventory (hereinafter – Boyko SEB Inventory).

TV news causes increase in state anxiety, as well as increase in negative mood. According to Szabo & Hopkinson (2007), anxiety increased due to randomly selected TV newscast. Additionally, Johnston & Davey (1997) showed marginally significant effect of negative TV news bulletins on young adults' anxiety, Cohen's $d = 0.57$, ($p < .1$).

H1: Negative TV news increases state anxiety in general sample, as well as in all three burnout groups (before-after) due to exposure to negative TV news.

H1a. Negative TV news increases state anxiety in general sample due to exposure to negative TV news.

H1b. Negative TV news increases state anxiety in all three burnout groups due to exposure to negative TV news.

Besides, the lack of burnout context in media effects research motivated us to investigate the problem. The main focus of this study is to reveal whether and how TV news stories alter students' state anxiety, mood, and what emotions such content elicits, in itself, and depending on the burnout level as an indicator of accumulated stress, likewise whether any significant patterns in this interaction take place.

Symptoms and stages of burnout are largely linked with personality traits and emotional conditions. Mousavi et al. (2017) showed that burnout is positively related to depression, anxiety, and stress. Besides, burnout significantly predicted 25% of variance in nurses' anxiety ($p < .001$). From this we derive our next hypothesis.

H2: The higher burnout young adults experience the more state anxiety increases due to exposure to negative TV news reports.

Inherently, burnout is tightly linked to anxiety. Carter (2010) argues that chronic anxiety is typical for cases of burnout.

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Besides state anxiety, we examined mood change. Johnston & Davey (1997) showed strong effect for mood worsening due to negative TV news: Cohen's $d = 1.17$. Considering this, we formulated the following assumptions.

H3. Mood worsens in general sample, as well as in all three burnout groups (pre-to-post) due to exposure to negative TV news.

H3a. Mood worsens in general sample due to exposure to negative TV news.

H3b. Mood worsens in all three burnout groups (pre-to-post) due to exposure to negative TV news.

Generally, links between burnout and mood changes, due to various stimuli are highly blurred and conditional. But bearing in mind desensitizing role of burnout and mood-worsening, we suggested the following.

H4: Exposure to negative TV news worsens mood in participants pertaining to three burnout groups differently.

Apart from state anxiety and mood changes, we examine effect of negative TV news on emotions and influence of burnout on this process. Facial reactions are considered a valid indicator of individual's emotional state at a given moment (Darwin, 1965; Ekman, Friesen, & Hager, 2002^a). We use the term "facial reaction", not "facial expression" or "facial microexpression" to underline dynamic nature of facial movements.

Therefore, in this study we tracked participants' facial reactions while viewing TV news videos. Each facial reaction was interpreted as indicative of a certain emotion according to Manual to the Paul Ekman's FACS Manual (Ekman, Friesen, & Hager, 2002^b) and FACS Investigator's Guide (Ekman, Friesen, & Hager, 2002^a).

H5: Intensity of emotions due to exposure to negative TV news decreases with the increase of burnout level.

Here we consider overall number of facial reactions as a measure for emotional intensity. According to this assumption, the higher burnout level person experiences, the lesser number of emotional facial reactions will be to negative TV news.

Unz et al. (2008) reported the biggest share of anger and fear in the structure of emotional response both to intended violence TV news and to non-intended violence TV news. In contrast, such content with no violence generally elicit weaker emotional response with the dominant role of enjoyment and disgust. Given this, we set out the following hypothesis.

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H6: In the general structure of emotions due to exposure to negative TV news anger and fear expressions will dominate.

This assumption will refer to the overall sample. Instead, concerning the burnout groups we expect the following.

H7: Joint share of anger and fear in emotional response will be higher, the more burnout participants experiences due to exposure to negative TV news.

These two emotions reflect two facets of “fight-or-flight” response in viewers that TV-producers trigger so frequently. This response reflects two crucial consequences of burnout experience. One of these aspects is anger and hostility. Another one regards to fear and evading certain kinds of stimuli. Thus we assume that these feelings’ share in the structure of emotions will increase with increase of burnout.

Method

For this study we conducted 3 (stages of burnout forming) x 3 (anxiety, mood, and emotions) within-subject experiment. We analyzed changes in numerical scores of state anxiety and mood on a pre-to-post basis in the whole participant sample, as well as depending of the experienced burnout level (unformed, under development, formed).

To measure burnout levels in participants we used Boyko Syndrome of Emotional Burnout Inventory and a corresponding methodology. Boyko burnout index consists of three phases that consider different stages of emotional shutdown: Anxiety Tension, Resistance, and Exhaustion. Each phase has its proper 4 symptoms that cumulatively add to each phase’s value (Vodopyanova & Starchenkova, 2009).

1. Anxiety Tension Phase is a precursor and launching mechanism for formation of burnout. Anxiety Tension Phase comprises the following symptoms: experiencing psychological trauma, low self-esteem, sense of doom, anxiety and depression.

2. Resistance Phase develops through reducing one's emotional responsiveness, compared to Anxiety Tension Phase. Resistance Phase is represented in the symptoms: inadequate selective emotional responsiveness, emotional and moral disorientation, expansion of emotion saving, reduction of professional duties.

3. Exhaustion Phase indicates overall decrease in energy tone and weakening of individual’s nervous system. This phase encompasses such symptoms: emotional deficit, emotional detachment, personal detachment (depersonalization), psychological and vegetative manifestations. (Orel, 2001).

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Score for each phase is measured on a scale from 0 to 120 points with the following intervals: 0 to 36 points—burnout phase is unformed; 37 to 60 points—burnout phase is under development, moderate level of burnout; 61 to 120 points—burnout phase is formed, maximum level of burnout.

Importantly, burnout is a state parameter, highly changeable in time. Participants filled out Boyko SEB Inventory before being exposed to stimulus material. This was aimed to detect initial, unaltered level of burnout, i.e., cumulative stress, in each participant to evaluate effects of negative TV news on state anxiety and mood based on burnout level. As a result, Anxiety Tension and Exhaustion phases were in more than 50% of participants unformed. Whereas, only one phase than was generally under development ($n = 26$) or formed ($n = 15$) was Resistance Phase (SEB RP). It was under development and formed in 87% of participants before watching negative TV news reports. Therefore, we decided to analyze SEB RP as an overall parameter of initial emotional response capacity towards TV news.

Participants

We recruited overall 47 healthy volunteers (19 males and 28 females, aged 18 to 21 years old ($M_{age} = 18.36$, $SD = 0.91$ years), first-third year students of the authors' institution, to participate in this study. All participants were motivated to involve in the study for course credits and the Institutional Review Board at the authors' institution approved the conducting of this research.

Inclusion / Exclusion criteria

The participants were eligible to enroll in the study if they were ≥ 18 years old, had no clinical manifestations of mental or cognitive impairment and no documented manifestations of pathologies in sensory analyzers. Exclusion criteria were: the use of psychoactive medication, drug or alcohol addiction, and psychiatric or neurological complaints. Written informed consent was obtained from each subject in accordance with the Helsinki Declaration; the local ethical committee approved the study. All volunteers participated in the study for course credits. They were tested 1—3 months before the exam time (baseline session).

Stimuli and manipulation checks

For the experiment we used solely the set of negative TV news reports consisting of five items. Selection of the stimuli encompassed several steps in accordance with the principles, which we described earlier (Author et al., 2016). First, we randomly selected a pool of 100 TV news stories previously shown on TV (only TV messages created and voiced by

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journalists; comments of a presenter, as well as reporters' live broadcasts were excluded). Then five coders (three female, two male), 1st grade students, assessed emotional valence of every news video in the pool using "negative – positive" Likert-type scale (-6 – very negative, 0 – neutral, +6 – very positive). Intercoder reliability had an acceptable level (Krippendorff's $\alpha = 0.81$). All coders' scores were averaged, classified in ascending order, and put within one of groups by negativity-positivity. We divided the whole scale span into three parts: (1) negative TV news (valence values vary from -6 to -2), (2) neutral (valence values vary from -2 to +2), (3) positive (valence values from +2 to +6). As a result, 52 TV news videos fell under the category of negative. For this group we calculated mean value of negativity. Those five negative TV news reports that had the nearest scores to the group's mean were regarded as typical and selected to experimental stimuli.

To avoid order effects, we randomized the order of TV news reports' demonstration within video set for every participant. Negative videos were approximately 7 minutes 10 seconds long without pauses. Finally, after selection it turned out that experimental TV news reports included as videos with scenes of outright violence, as of natural disasters.

Psychometric measurements

To measure burnout (before viewing), state anxiety, and mood (before and after viewing the videos) we developed two questionnaires (before and after), filled out by participants that encompassed the following inventories.

1) Burnout level by using Boyko SEB Inventory, adapted for students by Author and Vasheka (Author, Vasheka, & Zyma, 2013; Vasheka & Author, 2011). We measured it only before viewing.

2) State Anxiety by using Spielberger State and Trait Anxiety Inventory (adapted by Y. Hanin). We measured state anxiety before and after viewing the videos in order to ascertain the direction of change.

State anxiety arises when a person mentally assesses a situational threat. When the object or situation that is perceived as threatening goes away or eases, a person no longer experiences anxiety. Therefore, state anxiety refers to a temporary condition in response to environmental stimuli. Spielberger State and Trait Anxiety Inventory (STAI) assesses state anxiety and divides the scale up into 3 levels: 0 – 30 – low, 31–44 – moderate, over 45 – high anxiety.

3) Mood self-assessment.

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In our study mood was measured on a 100-point scale using two-sided ruler with values indicated on one side (visible to experimenter) and no values indicated on reverse side. For mood assessment participant was asked to evaluate her or his mood from “extremely bad” (on the left side of the ruler) to “extremely good” (on the right side of the ruler).

Facial reactions and emotions

We define facial reaction as a short-term change in facial expressions. According to Ekman (1992; 2009), and Shreve (2013), who distinguishes micro- (lasting last up to $\frac{1}{3}$ of a second (roughly 10 frames), from macro-expressions (typically last $\frac{3}{4}$ th of a second to 2 seconds (roughly 24—60 frames). In our analysis we included both types of reactions without intensity scoring.

To provide a structure of emotions, elicited by negative TV news, we calculated mean numbers of reactions separately in general sample and in burnout groups.

Participants’ facial reactions were recorded by video camera Canon MV890 during their exposure to the videos. Subsequently, all the reactions were processed by four coders (2 males and 2 females, mean age was $M = 21.3$ years), who had been trained using Facial Action Coding System Manual (Ekman, 2002^b). At the moment this methodology is the most comprehensive measurement approach to quantify facial expressions. FACS enables powerful description of nearly all visually detectable changes in facial behavior in terms of 44 Action Units (AUs). Instead, we regard intensity of an emotion by number of facial reactions indicative of this emotion in response to the stimulus video set. Hence, our coders interpreted and calculated total number of facial reactions by AUs, and then we aggregated these data for the whole video set.

Ekman distinguishes 7 principal emotions linked to facial expressions: happiness, surprise, sadness, anger, fear, disgust, and contempt. Among them the latter 5 are regarded as negative emotions; surprise is regarded as neutral, and happiness with all of its shades (amusement, pride of achievement, satisfaction, relief and contentment, etc.) is regarded as positive emotion (Ekman, 1999).

Interpretation and generalization of the facial reaction data consisted of several steps:

- 1) Watching and decoding of facial reactions on the valence and intensity. Coders completed this step using FACS Manual (Ekman, 2002^b).
- 2) Assessing basic Action Units (AUs) in respect to experienced emotions. First and foremost, we isolated emblematic AUs indicative of certain emotions in accordance with FACS

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Investigator's Guide (Ekman, 2002^a, p. 174) and summarized intensity of each experienced emotion.

- 3) After that we compared the intensity of different emotions due to exposure to negative TV news as in general sample, as between three burnout groups. Importantly, by intensity of emotion we mean respective quantity of facial expressions.
- 4) Ultimately, we developed the emotional structure in response to negative TV news as in overall sample, as in three burnout subgroups.

Procedure

After visiting the lab, students were told that they were going to participate in the study and watch several TV messages. Then in order to participate in the experiment each participant had to sign the Written Consent. As a result, everyone of 47 participants signed this document.

Prior to watching TV news reports participants were told to close their eyes and sit calmly for 3 minutes. Then they sat for 1 minute with open eyes in front of a blank monitor screen. We made this to let the participants relax before watching videos, and, thus, to provide clear background for measurement.

Right before the experiment the participants were instructed to open their eyes, then to watch the videos (with pauses in between), to keep their eyes open during the pauses and to close their eyes and relax after the last video. The participants were watching news videos while comfortably sitting in reclining armchairs in a soundproof room.

The whole procedure was individual, i.e., solely one participant took part in the experiment at any given moment. Stimulus content was shown on a computer monitor Samsung SyncMaster 740N 17-inch LCD Monitor with 1280x1024 resolution. The participants were seated about 1 m away from the computer screen. After viewing each TV news report a pause of 2 min was made to let the participants have some rest before watching next news item. During pauses each participant was sitting in the same position as while watching TV news reports and saw blank computer screen in front of herself / himself.

All the experiment sessions were conducted from 10 a.m. to 1 p.m. every day. We provided the participants with the same instructions that they would fill out pre-questionnaire, and then watch several TV news videos and then they would fill out the post-questionnaire. Thus, we did not reveal the real purposes of the study. Besides, we reminded the participants the key point ensued in the Written Consent, signed by participants and researchers, that at

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any moment each participant could stop taking part in the experiment without explaining reasons. By the way, there were no such cases.

Statistical processing

The processing of the statistical data was performed in IBM Statistical Package for Social Sciences for Windows, version 15. To this end, we used the following tests. First, to check normality of data distribution, necessary to use parametric statistical tests we conducted *Shapiro-Wilk Test*. This test showed an abnormal distribution in all kinds of collected data. Therefore, we choose nonparametric tests for all statistical analyses: *Wilcoxon Signed-Ranks Test* for two related samples (as for pre-to-post state anxiety and mood changes in overall sample), *Kruskal-Wallis Test* for three or more independent samples (as for comparing scores between three burnout groups). To specify links established by Kruskal-Wallis Test we used Mann-Whitney Test (i.e., to compare scores of two out of three burnout groups). As a measure for effect size, we utilized Pearson's r .

Results

Before exposing participants to negative TV news reports, we measured burnout to specify key levels of this variable. Here are the shares of participants pertaining to either burnout groups: unformed, under development, or formed for each of three burnout phases.

Table 1. *Scores for burnout phases, measured before viewing the videos.*

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Burnout phases	Unformed	Under development	Formed	N
	negative TV news stories			
1. Anxiety Tension Phase	39 (83 %)	6 (12,7%)	2 (4,3%)	47
2. Resistance Phase	15 (31,9%)	26 (55,3%)	6 (12,8%)	47
3. Exhaustion Phase	31 (66%)	14 (29,8%)	2 (4,2%)	47
4. Overall burnout level	31 (66%)	13 (27,7%)	3 (6,3%)	47

Based on these data we concluded that Burnout Resistance Phase (SEB RP) was the most widespread throughout the sample and other two phases were in majority unformed. According to Boyko, SEB RP includes the following symptoms: 1) inadequate selective emotional responding, 2) emotional and moral disorientation, 3) expansion of emotion saving, 4) reduction of professional duties (Vodopyanova, Starchenkova, 2009). In accordance with results of the correlation analysis, all these symptoms contribute to this phase's formation, but the biggest contribution is brought in by the symptoms # 3 "expansion of emotion saving" ($r = .755$, $p < .001$) and # 4 "reduction of professional duties" ($r = 0.713$, $p < .001$). Additionally, regression analysis confirmed the dominant contribution of symptoms # 3 and # 4 to the formation of the BRP (Table 2).

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Table 2. *Regression analysis of SEB RP formation.*

Symptom	Beta	Std.Err.	B	Std.Err.	t(47)	p-level
Inadequate selective emotional responding	-0.036	0.20	-0.05	0.28	-0.176	.86
Emotional and moral disorientation	-0.13	0.178	-0.17	0.228	-0.74	.46
Expansion of the sphere of emotion saving	0.39	0.17	0.46	0.20	2.29	.026
Reduction of professional duties	0.52	0.199	0.67	0.25	2.62	.01

Considering these figures, we analyzed Burnout Resistance Phase as a principal moderation variable with 3 levels: 1) BUF: “Burnout RP unformed”, 2) BUD: “Burnout RP under development”, 3) BF: “Burnout RP formed”. All the data in this study will be considered in overall sample, as well as in the three groups depending on burnout level.

State anxiety and mood changes

Median scores for state anxiety before and after watching negative TV news are as follows. We used Pearson’s r as an effect size for nonparametric data, in accordance with Rosenthal (1994).

Table 3. *Median state anxiety and mood scores before and after viewing negative TV news stories with Pearson’s r as a measure of effect size (SD in parentheses).*

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State anxiety prior	State anxiety post	Effect size, r	p -level	Mood prior	Mood post	Effect size, r	p -level	N
General sample								
31 (9,3)	34 (11)	.27	.008	81 (17,3)	67 (17,8)	-.6	.0001	47
Burnout Unformed								
28,5 (5,9)	28,5 (3,4)	.23	ns	82,5 (9,6)	76 (21)	-.51	.006	15
Burnout Under Development								
29,5 (7,8)	31 (9,8)	.4	.004	77,5 (11,3)	63 (22)	-.36	.009	26
Burnout Formed								
45 (15,3)	38 (15,6)	-.27	ns	69,5 (23)	66,5 (16,8)	-.03	ns	6

¹ Effect size and p -values were developed from *Wilcoxon's Signed-Ranks Test* for related (pre-to-post) samples.

² Overall state anxiety values were given on a scale from 0 to 80. Mood was evaluated on a scale from 0 to 100.

Negative TV news stories elicited significant pre-to-post state anxiety increase in general sample with almost medium effect size ($r = .27$, $Z = 2.648$, $p < .01$). Among 3 burnout groups state anxiety increased significantly only in BUD group ($p < .01$) with medium effect ($r = .4$, $p < .01$), but in other groups state anxiety effects were nonsignificant, contrary to our initial H1b.

In order to verify the H2 differences among state anxiety change scores between burnout groups we performed *Kruskal-Wallis Test*. As a result, we found such differences, due to exposure to negative TV news ($\chi^2(2) = 8.272$, $p < .05$). To specify relationship between scores of burnout groups, we performed *Mann-Whitney Test*. Consequently, between BUF and BUD there we no difference ($p > .05$). Instead, such difference was observed between BUD and BF ($U = 21$, $Z = 2.759$, $p < .01$). Besides, BUF-BF link was also nonsignificant.

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Mood got worse with strong effect due to negative TV news in overall sample ($r = -.6$, $Z = -3.745$, $p < .001$) while comparing pre-to-post scores. Negative TV news significantly worsened mood in BUF and BUD groups with strong and medium effects, respectively ($r = -.51$, $Z = -2.764$, $p < .01$; $r = -.36$, $Z = -2.602$, $p < .01$), and no effect in BF group. I.e., the more burnout participants experienced, the weaker mood effect was observed.

However, contrary to our expectations, mood change scores did not differ significantly between burnout groups ($\chi^2(2) = 1.361$, $p > .05$).

Emotional reactions

In general, student sample responded to negative TV news with 212 facial reactions. I.e., each participant responded with $Mdn = 4,51$ ($SD = 4,88$) facial reactions.

By stating H5, we wanted to compare overall facial reactions number (as a measure of emotional intensity), notwithstanding ascribed emotions, between 3 different burnout groups: unformed, under development, and formed. To compare these scores we used *Kruskal-Wallis Test*. As a result, such comparison did not reveal significant differences ($\chi^2(2) = 2.028$, $p = .363$). Interestingly, *Mann-Whitney Test* comparison of BUF and BUD groups showed nearly significant differences ($U = 144$, $Z = 1.392$, $p = .164$). The same juxtaposition between BUD and BF groups didn't reveal significant differences ($U = 74$, $Z = -.194$, $p = .846$).

With H6 we suggested a dominating role of anger and fear in the structure of emotional response to negative TV news. Generally, in the overall sample negative TV news elicited mainly fear and anger (and fear a little bit more than anger) that cover over $\frac{3}{4}$ of all detected facial reactions.

Figure 1. *Structure of emotions in response to negative TV news observed in the overall sample.*

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Remaining reactions were distributed between surprise, sadness, contempt, and disgust.

H7 predicted positive relationship between burnout level and joint share of anger and fear in emotional structure. As we had assumed, with increase of burnout joint share of fear and anger, in effect, does rise in the structure of emotional response.

Figure 2. *Structure of emotions in response to negative TV news observed in BUF group.*

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Figure 3. *Structure of emotions in response to negative TV news observed in BUD group.*

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Figure 4. *Structure of emotions in response to negative TV news, observed in BF group.*

While in BUF group this share is 72%, in BUD group—76%, in BF group—88%. Consequently, we attest an increase in a joint share of two basic negative emotions.

Discussion

The goal of this study was to advance the understanding of how negative TV news reporting on negative events of violent and nonviolent nature affect young adults' state anxiety, mood, and emotions (RQ1) and how viewers' burnout influence these reactions (RQ2). In line with predictions about the relationship between appraisal outcomes and subjective feelings stated by Scherer (1993), we expected intensity of emotional response represented in facial reactions scores to decrease with the increase of burnout level (unformed, under development, formed). Large body of research so far focused on media-induced externalizing emotions (aggression, behavioral changes, etc.). But insufficient efforts have been made to assess internalizing emotional patterns in response to TV news content (e.g., Pearce & Field, 2016). Based on past research (Johnston & Davey, 1997; Madan, 2012; Pierce & Field, 2015; Unz et al., 2008) we predicted pre-to-post changes in key internalizing parameters: state anxiety to increase and mood to worsen due to exposure to negative TV

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news (H1a and H3a). By employing burnout as an additional variable, we predicted similar to H1a and H3a pre-to-post state anxiety and mood changes in each of 3 burnout groups (H1b and H3b). By stating H2 we assumed that the stronger burnout level the stronger increase of state anxiety was to take place (between-burnout-groups comparison). H4 was stated with the same purpose, though regarding pre-to-post mood changes. In addition, we expected a decrease of emotional intensity, manifested in overall number of facial reactions, with the increase of burnout level in participants (between-burnout-groups comparison, H5). With H6 we predicted a dominant role of two emotions – anger and fear — in a structure of emotional response to negative TV news (overall sample). Finally, we predicted the increase in anger and fear the more burnout participants experienced (H7).

Primary result of present study is confirming a dominant role of anger and fear in emotional response to negative TV news, as we predicted with H6, previously found by Unz et al. (2008). However, according to our results, contrary to Unz et al., fear seems more salient as in overall sample, as in all burnout groups. In general, primary hypotheses were supported with few exceptions. H7 about larger extent to which viewers with larger burnout experience fear and anger was also confirmed. By stating H5 we expected reduction of experienced emotional intensity (manifested in overall number of facial reactions towards the stimuli) with the increase of burnout level. Consequently, we did not observe such differences ($p > .05$). That is why we cannot infer lesser intensity of emotional response to negative TV news with the increase of burnout. We may explain this finding solely with approximately equal emotional response patterns between burnout groups. As Szabo & Hopkinson (1997, p. 61) put it, “People’s responses to the bulk of the news may be passive and contain an element of helplessness (i.e., being against a war but feeling that nothing can be done).” And burnout, regarding our findings, is unlikely to be related with such helplessness. Since mood worsening in our study was more noticeable than negative emotions in different burnout groups, we may conclude that negative TV news influence not emotions, but rather moods, making response patterns more weak and protracted.

H6 stressed dominant role of two emotions: anger and fear in response to negative TV news. In overall sample these two emotions jointly covered over 75 % of all facial reactions. So these finding is in accordance with results of prior research employing the same methodology (Unz et al., 2008).

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With regard to burnout division of the sample, we observed gradual increase of joint share of fear and anger: while in BUF group this share is 72%, in BUD group—76%, in BF group—88%. Therefore, we accepted H7.

Consequently, it is clear that negative TV news tends to elicit a wide range of negative feelings: from fear and anger to disgust and contempt. Contrary to Unz et al. (2008), we did not observe so high frequency of AU14 (dimpler), mainly asymmetrical, facial expression commonly indicative of contempt. This finding may be attributed to the cultural differences. Therefore, arises the need to subsequently conduct inter-cultural study of emotional response to negative TV news.

Overall participant sample experienced significant state anxiety increase with nearly medium effect and mood worsening with strong effect due to exposure to negative TV news stories. Thus, we accepted H1a and H3a.

State anxiety showed pre-to-post change mostly in persons with burnout under development. Meanwhile, with unformed and fully formed burnout such effect did not occur. In the meantime, we observed the strongest mood worsening effect in group with unformed burnout (strong effect), in group of 'burnout under development' mood worsening was weaker (medium effect), and in group of 'formed burnout' there was no mood effect. This generally supports H4 about differences in mood change scores between burnout groups, due to news exposure. Furthermore, we see the marked reduction of mood worsening reaction effect with the increase of burnout level and fully burned-out students tended to watch negative TV news with apathy. Thus, we confirmed Johnston & Davey's (1997) finding about not only media-induced mood worsening, but that TV news exacerbate viewers' personal worries and anxieties. In contrast, one should bear in mind that most personal concerns that emerge during media consumption are "not specifically relevant to the content of the programme itself" (p. 90). Consequently, our findings fit in the perspective established by Johnston & Davey and we joint to their suggestion for TV schedulers to consider and prevent detrimental effects when preparing and scheduling programmes containing emotively negative content.

While regarding structure of the sample by burnout we see that state anxiety increased only in people with burnout under development while in others this change was nonsignificant. We cannot find an unambiguous explanation for this pattern, but we assume that it was triggered by the discomfort persons feel due to decreasing of personal emotional responsiveness towards various stimuli. Considering the fact that the study was conducted 1—

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3 months before the baseline session while students prepare for their exams, we suggest that cognitive overload contributed to a variance of collected data. In any case, further research should verify the link between such discomfort and cognitive overload. Among other things, it would be preferable to take into consideration different types of overload-provoking information and to reproduce the most natural conditions of TV viewing. Since it is obvious that laboratory research setting, in itself, may lead to measurement errors that totally cannot be eliminated in media effects research.

The main causes for joint increase of anger and fear with increase of burnout may be stronger activation of these negative emotions in burned-out students, due to the same as aforementioned discomfort, launched by altered patterns of emotional responding. This reduced sensitivity may serve a probable outcome as of prior desensitization towards terrifying TV news messages and a response to cognitive overload. On the other hand, a huge variety of stimuli people deal with regularly may cause such desensitization.

However, several potential limitations of this study must be mentioned. First, major one is laboratory settings in which experiment was performed. This is one of main criticisms towards media effects paradigm — inability in a majority of cases to create ideally natural for the viewer TV viewing situation. Second limitation is measuring immediate affective consequences of exposure to negative TV news. But these research settings were designed to control independent variable, i.e., stimulus news content that should have been common for all the participants. On the other hand, this study was conducted within narrow short-term perspective and we cannot extrapolate our results too far, e.g., on other demographic samples, or on television or TV news as a whole, i.e., external validity of this study's results is limited. And it is third limitation. Therefore, future research should examine responding to TV news that go beyond the immediate emotional outcome of TV news consuming. Fourth limitation is that we did not add cognitive overload as a variable in our analysis. In further research, we will include it as a potential link between burnout and media-induced emotions.

Finally, in this study we aimed to determine whether media-induced emotional reactivity is dulled or not by the burnout level. With few exceptions we can answer this question affirmatively, however, rather on a mood, not on emotional level.

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