RESEARCH ARTICLE

THE EFFECTS OF THE TYPE OF INFORMATION AND ITS FORMAT OF PRESENTATION ON THE RELATIONSHIP BETWEEN PATIENTS' AND ESCORTS' NEGATIVE AFFECTIVITY AND THEIR AGGRESSIVE TENDENCIES TOWARD MEDICAL STAFF IN THE EMERGENCY DEPARTMENT.

Sarah Solomon and Dalit Lev-Arey Margalit.

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Manuscript Info	Abstract
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Aggression directed toward medical staff by patients and escorts at emergency departments (EDs) is a critical and global phenomenon. The current study aims to improve our understanding of the causes of patients' and escorts' aggression, and to suggest an applicable tool of information provision, which may help to decrease this phenomenon. This study investigated the effect of information's content and its format of presentation on the relationship between patients' and escort's negative affectivity (NA) and aggressive tendencies toward medical staff in the ED. According to the scientific literature, aggression may be derived from NA, but it may also be a consequence of feelings of injustice. Moreover, providing information may improve the sense of justice, and further decrease aggression. In addition, it is possible that the type of information and its format of presentation may have different kinds of effects. Therefore, three hypotheses were suggested: (a) NA would be positively related to aggressive tendencies; (b) the type of information would moderate the relationship between NA and aggressive tendencies, that is, the relationship would be weakest for explanatory information, stronger for technical information, and strongest for neutral information; (c) format of presentation would moderate the moderation of the type of information. Participants in the study were patients and escorts who waited in the ED in two hospitals in Israel. They were exposed to either large signs, or pamphlets, which contained explanatory, technical, or neutral information regarding the ED. All participants filled out a questionnaire which measured their NA and aggressive tendencies. Results showed that NA and aggressive tendencies were positively related. However, the type of information did not moderate this relationship. A three-way interaction was found between NA, type of information and format of presentation, where in the private condition, neutral information had a stronger effect of decreasing the relationship between NA and aggressive tendencies. Explanatory and technical information did not have such effect. The effect was not found in the public condition. The study demonstrated the link between NA and aggression in the ED. Furthermore, the study showed that the combination of neutral information and private presentation may help lessen this relationship.

Corresponding Author:- Sarah Solomon.

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Introduction:-

Violence at Emergency Departments (EDs) is a critical, and, unfortunately, common problem in many hospitals worldwide (Crilly, Chaboyer, & Creedy, 2004; Hodge, & Marshall, 2007) and in Israel (Landau, & Bendalak, 2008). According to the scientific literature, EDs staff suffer from significant levels of violence from patients and escorts, directed toward them (Luck, Jackson, & Usher, 2007). Moreover, ED staff are at the highest risk of all hospital employees of becoming victims of patients' and escorts' aggression (Landau, & Bendalak, 2008).

Several studies, which have examined this phenomenon, provide evidence for its significant extent worldwide. A survey of emergency medicine residents and attending physicians assessed the incidence of violence in the ED in the US (Behnam, Tillotson, Davis, & Hobbs, 2011). Results showed that 78% of the responding workers reported at least one workplace violence incident within one year, and 21% of them reported more than one type of violent act. Landau (2004) investigated the extent of violence against staff in emergency wards in Israel. She discovered that 75% of the staff experienced violence within one year, and that 87% of them were direct victims. Crilly, Chaboyer and Creedy (2004) examined the incidence of violence by patients towards nurses in EDs in Australia. Results showed that 70% of the nurses reported over 100 episodes of violence in a five-month period.

A. *Aggression in the ED – Why Is It So Critical?*

Studies have demonstrated the detrimental effects of aggressive behaviors and violence towards medical staff (Hislop, & Melby, 2003). Jenkins, Rocke, McNicholl and Hughe (1998) showed that ED staff in the UK were regularly abused, both verbally and physically, and sustained fractures, lacerations, and soft tissue injuries. Al-Sahlawi, Atawneh, Zahid, Shahid and Al-Farrah (2003) investigated the prevalence and effects of violence against nurses in an ED in Kuwait. They found that most nurses experienced verbal insults or threats of imminent violence, and some were also physically attacked. Most nurses also suffered from after-effects, such as flashbacks, sleeplessness, fearfulness and depression. From an organizational perspective, Fernandes et al., (1999) have shown that many ED employees in Vancouver reported impaired job performance following violent incidents, reduced job satisfaction, and taking days off. Farrell, Bobrowski and Bobrowski, (2006) found that verbal or physical abuse influenced nurses' desire to stay in nursing, their productivity and the potential to make errors. From a financial point of view, the National Audit Office's report estimates the direct cost of violence and aggression in health service to be at least £69 million per a year (National Audit Office, 2003). Since ED staff are at the highest risk of all hospital employees of becoming victims of patients' and escorts' aggression (Landau, & Bendalak, 2008), it is likely that the financial costs of violence, specifically in the ED are also significantly high. In particular, the financial costs of patients' and escorts' violence and aggression toward medical staff in the ED include medical costs, nurse recruitment and retention, health outcomes and patient safety (Howerton Child, 2013).

B. *What Can Be Done?*

In the next section, the ways in which the current study intended to deal with this critical issue, will be presented. This section will focus on two aims of this study: (a) providing a better understanding of the antecedents of patients' and escorts' aggression toward medical staff in the ED, and (b) developing a more elaborate tool that may help to reduce this phenomenon, in relation to the solutions which are available today.

A need for a better understanding of the phenomenon. Despite the fact that aggression toward medical staff in EDs is a prevalent and dangerous phenomenon, research aimed at understanding this phenomenon is missing, and active attempts to curtail aggression are severely lacking (Landau, & Bendalak, 2008; LeBlanc, & Kelloway, 2002). Therefore, the current study's aim is to uncover the underlying mechanism of this phenomenon. Particularly, the current study suggests that patients' and escort's aggressive tendencies toward medical staff in the ED are related to their negative affectivity and to their sense of injustice.

A need for an elaborate tool. The literature demonstrates that providing information may lessen individuals' aggression, as a sense of injustice may be a major cause of aggression in organizations, and since information provision may help to improve it[1] (Shaw, Wild, & Colquitt ,2003). Thus, applying this solution in the ED's context may potentially decrease aggression.

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[1] A wider and a more elaborated explanation for this mechanism and its potential in lessening aggression will be discussed in a later section ("Providing Information as an Intervention").

Although this solution may help in lessening the phenomenon of patients' and escorts' aggression toward medical staff in the ED, some specific aspects and features of this application, that may determine its effectiveness, should also be considered. First, it may be that different kinds of information may have different effects. Therefore, it is crucial for research, especially in relations to EDs, to discover which type of information content is the most helpful in diminishing patients' and escorts' aggression toward medical staff in the ED. Furthermore, the manner in which information is presented affects its processing (Palvia, Pinjani, Cannoy, & Jacks, 2011). Thus, understanding what method of presentation will be more effective in reducing patients' and escorts' aggression toward medical staff is highly important. Therefore, the current study also aims to test the effect of information's content and the effect of the information's format of presentation on the relationship between negative affectivity and patients' and escort's aggressive tendencies toward medical staff in the ED, by improving their sense of justice.

In the next sections, the theoretical basis for the rationale of the current study will be presented.

C. Negative Affectivity and Aggression

Many individuals view the ED as an anxiety-provoking and hostile environment (Neades, & Jack, 2007). Yoon and Sonneveld (2010) investigated patients' experience in the waiting room of the ED, and explored the factors, which lead to anxiety. Their findings suggest that patients experience anxiety due to uncertainty and confusion about the procedure of treatment, the time they have to wait in the ED, their distrust of the system, their uncertainty about the amount of time they will have to wait before receiving medical care, and the fear they might miss their turn in the queue. Furthermore, according to Neades and Jack (2007), the occurrence of a sudden crisis with the hurried arrival to the ED itself may trigger strong emotions, such as fear and anxiety (Neades, & Jack, 2007). Thus, it seems possible that an ED visitor will experience significant levels of negative affectivity (NA) - a general dimension of subjective distress and non-pleasurable engagement that subsumes a variety of aversive mood states, such as anger, contempt, disgust, guilt, fear, and nervousness (Watson, Clark, & Tellegen, 1988).

Berkowitz's Cognitive Neoassociation model (1989) can help us understand the link between NA and aggression. This multi-stage model proposes that NA generates aggressive inclinations. In the first stage, the aversive event produces a negative affect that arouses automatic expressive-motor reactions, feelings, thoughts, and memories that are associated with both flight and fight inclinations. Only in later stages, higher order processing takes place (e.g attributing, thinking, etc.). A large body of evidence supports Berkowitz's model (Denson, 2011). For example, Twenge, Baumeister, Tice, and Stucke (2001) demonstrated that participants who were socially excluded behaved more aggressively, demonstrated through giving more negative evaluations to those who insulted them, and making louder aversive noises. Another study (Verona, & Curtin, 2006) focused on the effect of priming NA among men and women. The study showed that men who were exposed to general stress showed significant increase in aggression, and that both genders had an increase in aggression due to exposure to frustration. Considering this, it is possible that patients' and escorts' aggression toward medical staff may appear as a result of NA. Thus, the hypothesis is as follows:
H1: NA would be positively linked to aggressive tendencies of patients and escorts.

D. Providing Information as an Intervention

The literature shows that aggressive behavior can also derive from feelings of injustice. Greenberg and Alge's model of workplace aggression (1998) suggests that people react aggressively when they perceive outcomes as unfair, and they may act even more aggressively if they know the outcomes also resulted from unfair procedures. Empirically, this notion has some support (e.g, Chory-Assad, 2002; Chory-Assad, & Paulsel, 2004). Chory-Assad (2002) explored the relationship between students' perceptions of justice in a college course and their aggression toward the course instructor, and found that students' perceptions of justice were negatively correlated with their aggression toward the course instructor. Further, Chory-Assad and Paulsel (2004) also investigated the relationship between students' perceptions of justice in college classes and their aggression and hostility toward their instructors. Again, the authors discovered that perceptions of justice were negatively correlated with students' aggression and hostility toward their instructors.

However, the literature also demonstrates that perceptions of justice can be increased when relevant information is given. According to Folger and Bies (1989), providing justification for a decision to employees is central to procedural justice, and a decision maker's supply of justifications is associated with an individual's perception of fairness. Empirically, some studies have also found that providing a relevant information may improve justice judgments (e.g., Bies, & Shapiro, 1987; Greenberg, 1990). Greenberg, (1990) measured employee's theft rates in

manufacturing plants during a period of pay decrease. He found that there were higher rates of theft among employees who suffered pay decrease. However, after employees received a thorough and a sensitive explanation for the pay cuts, their feelings of inequity were reduced, and the theft rate was also lessened. Bies, & Shapiro (1987) tested the effects of giving accounts on perceptions of fairness. The authors found that a manager's improper action toward his employee, was perceived by participants as farrier when they received causal account, which claimed for mitigating circumstances.

One possible reason why information helps to improve perceptions of justice may be provided by the Uncertainty Management model (Van den Bos, & Lind, 2002). The model suggests that when people form fairness judgments, they are engaged in resolving uncertainties they encounter during the fairness judgment process. According to the model, they overcome uncertainty by using information in order to assess whether things are fair or unfair. Therefore, information is suggested to be an important means for establishing a sense of fairness.

Thus, since a sense of injustice might lead to an aggressive reaction, and providing information may lessen feelings of injustice, it is possible that giving information may increase the sense of justice, and further reduce the probability of an aggressive reaction. If so, providing information about the ED's procedures to patients and escorts may help reduce their aggressive inclinations toward medical staff.

Originally, the theories and experiments mentioned above, regarding justice perceptions, considered the case of employees in organizations. However, the literature on justice also includes studies, which applied theories of justice to the case of patients, rather than employees (e.g., Holmvall, Twohig, Francis, & Kelloway, 2012; Miles, & Naumann, 2004; Murphy-Berman, & Fondacaro, 1999). Holmvall, Twohig, Francis and Kelloway (2012) investigated patients' experiences of fairness and commitment in the health care context. Miles and Naumann (2004) examined the effect of organizational justice on patients' perceptions in the ED. Murphy-Berman and Fondacaro (1999) explored the relationship between patients' appraisals of justice following health care treatment decisions and expectations for consequences to themselves, estimates of the manner they were viewed by the health care authorities, attributions about the reasons for their treatment; and their ratings of emotional reactions. Based on those studies, the current study uses the body of knowledge of the literature on justice to the case of patients and escorts in the ED.

Type of information. The extent to which providing information will help in reducing aggression may also be influenced by other factors. One of them may be the type of the provided information; specifically, technical vs. explanatory. Morrison (1993) identified technical information as critical to situations that are new and unfamiliar. Her study investigated the organizational information-seeking process of newcomers in their new jobs. The study showed that newcomers sought for technical information, and that this search was related to greater satisfaction. In her study, technical information was defined as "information about how to perform required job tasks" (1993). A further study of Morison (1995) explored the types of information that are useful for newcomers' assimilation in their new workplace. Consistent with the previous research, the results showed that technical information was considered by newcomers as highly useful for their assimilation. However, the literature also considers the beneficial effects of explanatory information. According to Bies (1987), explanation is defined as a causal account or justification which is provided by the superior when the outcome of the decision process is not affected by subordinates' communicated preferences. From this perspective, some studies have demonstrated the effect of rather using explanatory information (e.g., Harland, Rauzi, & Biasotto, 1995; Sitkin and Bies, 1993). Sitkin and Bies (1993) identified in their meta-analysis that explanatory information may be helpful in conflicts. Harland, Rauzi, and Biasotto (1995) investigated the impact of the use of explanations on employees' low perceived fairness regarding the use of personality tests. They found that the negative fairness perceptions of the personality tests were reduced by using explanations regarding the use of these tests.

Therefore, it seems that different kinds of information may have a positive effect on patients and escorts. The remaining question, however, is what type of information will be more effective in reducing their aggressive tendencies. In this study, technical information answered 'where' and 'what' questions, such as 'What do different staff uniforms represent' and 'What do different functions of the ED do', whereas explanatory information answered 'why' questions, such as 'Why is waiting required' and 'Why is medical service not provided according to the order of arrival'. Since organizational justice literature focuses on explanations and justifications that increase the sense of justice (Shaw, Wild, & Colquitt, 2003), it is more likely that this kind of information, namely, explanatory information, will be more useful in improving it, and thus lead to a greater reduction in aggressive tendencies. In

contrast, technical information may be useful in adapting to novel scenarios, while being less relevant in understanding procedures and decisions in the ED, which might be perceived as unfair when no sufficient explanation of a 'why' question is provided.

Nonetheless, since technical information may still answer some questions regarding the setting of the ED, it can be quite useful for patients and escorts to understand their setting better, lessening the probability of feeling a sense of injustice due to a lack of understanding of the ED. In contrast, information that answers no relevant questions to patients and escorts regarding the ED setting, might be even less helpful for them to understand relevant facts they might perceive as unfair, and thus may be less useful in reducing aggression. For the purpose of this study, this type of information would be identified as "neutral" information.

Therefore, the current study proposes that explanatory information will be more effective than technical information in reducing the relationship between patients' and escorts' NA and aggressive tendencies, and that technical information will be more effective than neutral information. Thus, the second hypothesis is as follows:
H2: The type of information would moderate the relationship between NA and aggressive tendencies, that is, the relationship would be weakest for participants who would receive explanatory information, stronger for participants who would receive technical information, and strongest for participants who would receive neutral information.

Format of presentation. The effectiveness of reducing aggression by providing information may also be influenced by its format of presentation. Information may be delivered in different kinds of forms, and the method through which information is presented can affect the degree to which the information is processed (Palvia, Pinjani, Cannoy, & Jacks, 2011). Since ED's visitors often experience high levels of anxiety (Ekwall, Gerdtz, & Mania, 2009; Ekwall, 2013), their ability to process information might be impaired (Eysenck, Derakshan, Santos, & Calvo, 2007), making the choice of the presentation method in the ED crucial.

Studies, which have compared different methods of presenting information show a clear advantage for printed information over spoken information or dynamic (video) information. For example, Furnham, Gunter, and Green (1990) compared between information received through audiovisual or audio-only channels, and found that printed information was best remembered by participants. Similarly, a second study (Mayer, Hegarty, Mayer, & Campbell, 2005) showed that participants who received a lesson consisting of paper-based static diagrams and text, performed better on a following retention and transfer tests, compared to participants who received a lesson consisting of computer-based animation and narration. Therefore, the current study will focus only on printed information.

However, printed information can be presented publicly, (e.g. on a signboard) (for example, Hu, Jiang, Tan, & Xie, 2013) or privately (e.g. using a pamphlet) (for example, Kools, Ruiter, van de Wiel, & Kok, 2004; Whittingham, Ruiter, Castermans, Huiberts, & Kok, 2008). Given the lack of studies which compare these two kinds of presentations, it is not yet possible to predict which method of presentation will be preferable in the ED setting. Thus, the current study proposes that information presented publicly will affect patient' and escorts' aggressive tendencies differently than information presented privately, however no assumption is made regarding which of the two methods will be more effective. Therefore, the third hypothesis is as follows:
H3: The format of presentation would moderate the moderating effect of the type of information on the relationship between NA and aggressive tendencies. That is, the effect would be different for participants who would receive information publicly, and for participants who would receive information privately.

E. The Current Study
Based on the review presented above, it is apparent that patients' and escorts' aggression toward medical staff is a detrimental issue, which might derive, at least partially, from NA. Moreover, aggression is known to be related to feelings of injustice, and since there is evidence that providing information may improve the sense of justice, it is possible that providing information may help in reducing aggressive behaviors. Furthermore, it is also possible that the type of information and its format of presentation may have different kinds of effects. Therefore, this study aims to test the influence of information's content and its format of presentation on the relationship between NA and patients' and escort's aggressive tendencies toward medical staff in the ED. The innovation presented in this study is the ability to compare the effectiveness of different types of information and formats of presentation, in an attempt to discover the exact condition in which providing information is most effective.

In the current study, NA was proposed to be positively related to aggressive tendencies. In addition, the type of information (explanatory, technical, and neutral) was proposed to be a relevant moderating factor for decreasing the relationship between NA and aggressive tendencies, and the format of presentation was predicted to moderate the moderation of the type of information. In the current study, participants were patients and escorts who waited in the ED waiting area. They received information regarding the ED; about half of the participants were exposed to large signs displayed in the ED, while the other half received pamphlets that were handed out personally. One third of the participants received explanatory information, another third received technical information, and the last third received neutral information. Simultaneously, they were asked to fill out a 21-items questionnaire, which measured their NA and aggressive tendencies.

Method:-

F. Participants
Participants were 1,291 individuals waiting in the ED of two large hospitals in the northern part of Israel. The age of the participants ranged from 18 to 90 (Mean= 41.17 years, SD= 15.2), 46.3% were male, and 60.7% were visitors of one out of the two EDs. Participants were chosen by using simple random sampling: participants were approached in the ED, and were told that the study was conducted in order to improve the ED's service quality. Patients and escorts who agreed to participate in the study filled out a questionnaire (see "Tools"). Patients and escorts who refused to participate, were told they may fill out only half of the questionnaire, instead of filling out the whole questionnaire, telling them it was a practical opportunity to report problems they encounter in the ED. However, patients and escorts who were still unwilling to participate, were not asked again to fill out the questionnaire. All participants took part in the research on a voluntary basis.

G. Tools
Format of presentation. A2 sized signs were used when presenting information in the *public condition*, and A4 sized pamphlets were used when presenting information in the *private condition*.

Type of information. Each sign and pamphlet presented one of three types of information in regard to the ED: explanatory, technical or neutral information. The relevant information was retrieved from the hospitals' websites. Further, pieces of this information were assigned to one of the three types of information mentioned above. The assignment was made based on the suitability of the pieces of information to the type of information.

In the *explanatory information condition*, the content displayed included the following topics: a) the aims of the ED (first aid, hospitalization, dismissal for further care in community institutions), b) important facts about the ED's procedure (expected waiting time in the ED, the policy of prioritizing patients' care in respect to their urgency), and c) a flowchart, depicting the stages of treatment in the ED. The following stages were illustrated in the chart: registering at the reception desk, admittance by an ED nurse and initial checkup, waiting for an ED physician's checkup, waiting for results of medical tests, if necessary - further medical tests and consultation with specialists from other departments, and the decision regarding hospitalization or dismissal and nurse's guidance.

In the *technical information condition,* the information displayed included the locations of central areas of the hospital (the cafeteria, coffee stalls, the synagogue, etc.), details regarding the public complaints office and the department of registration and medical information, medical confidentiality policies, and the dismissal procedure.

In the *neutral information condition,* the information presented included several statements regarding the hospital's views and actions in the prevention of environmental pollution (e.g., "the hospital's administration cares a great deal about the avoidance of environmental polluting, as required by law and by the Ministry of Environmental Protection's instructions", "The hospital regularly assigns resources for evaluating the environmental risks in its actions, and for avoiding damage to its surroundings").

H. Measures
A 21-items questionnaire (see Appendix 1) was developed for the purpose of the present study, in order to measure the feelings and perceptions of patients and escorts.

Negative affectivity. 11 self-reported items were used to measure participants' level of negative affectivity. Five of them were composed based on the state scales from State-Trait Anger Scale (STAS-S) (Spielberger, Jacobs, Russell, & Crane, 1983). STAS-S alpha reliability is .93 (Spielberger, Jacobs, Russell, & Crane, 1983). Six of the items were

used based on anxiety state scales from Spielberger's State-Trait Personality Inventory (STPI) (1979). Internal consistency coefficients for the scale range from .86 to .94 (Boyle, Helens, Matthews, & Izrad, 2014). The items of the STPI were translated by Zeidner and Ben-Zur (1998), whereas the items of the STAS-S were translated by the author in 2013. The items were not changed, however, the instruction for rating them was presented in a shorter version. This was done in order to facilitate the participants in reading and filling out the questionnaire, assuming that due to the stressful setting of the ED and the patients' negative emotional state (as previously discussed at the introduction), they might be unwilling to read long texts and to fill out a questionnaire which requires a greater mental effort. Moreover, the range of the scale was changed to 1 to 7. Participants were asked to rate statements such as "I am angry" or "I am stressed" on a scale of 1 (not at all) to 7 (to a high degree). In the current study, the internal consistency was $\alpha = .93$.

Aggressive tendencies. Eight items were used to measure participants' aggressive tendencies. The items used were based on studies conducted in recent years, which tested aggressive tendencies of patients and escorts in the ED (see Moriah et al., 2011; Agasi et al., 2010; Treister, Cheshin, Agasi, Nesher, & Rafaeli, 2010). The items were developed by the authors of those studies in order to measure aggressive tendencies, and used in the current study. The items and the instruction for rating them was changed from an explicit request to the participants to report about their own wishes to do some specific aggressive acts, to an implicit request to evaluate how much the other people in the ED would like to do those acts. This change was done in order to make the task to be more "projective", so the participants would be less inhibited in expressing their own aggressive tendencies, by seemingly making evaluations of others' aggressive tendencies. Participants were asked to make such evaluations regarding statements such as "speaking aggressively toward the ED staff", by rating on a scale of 1 (I do not agree at all) to 7 (I agree very much). $\alpha = .92$.

Control Variables
Demographic variable. Participants indicated their gender and age (for descriptive statistics of control variables, see Appendix 5).

Gender was chosen as a control variable, since the measures of aggressive tendencies and NA may be influenced by the different social role traits, which are assigned for men and women in the western culture: aggression is considered to be a more masculine characteristic (Levant, 1996), while femininity is associated with emotionality (Klenke, 2004). Thus, it is possible that men would feel more free to express aggression, whereas women may feel more comfortable to admit having negative feelings. Therefore, it is possible that men and women would differ on the scores of aggressive tendencies and NA.

Age was chosen as a control variable, since the individual experience of the ED may be different for people in different ages (Hedges et al., 1992). Some studies have explored the experience of elderly patients at the ED (e.g., Hedges et al., 1992; Watson, Marshall, & Fosbinder, 1999), however those studies did not compare between groups of different ages. Nonetheless, in light of the scientific interest in the interaction between age and the experience of the ED, it seems reasonable to consider age as control variable.

Hospital. Since the research was conducted in two hospitals, the type of the hospital was also considered as a control variable. This was done as the tow settings may have different features (such as noise, quality of service, etc.) which might influence differently patients' and escorts' aggressive tendencies and NA. For instance, in case that one hospital is noisier than the other, the visitors of the former ED may have higher levels of NA and aggressive tendencies. Thus the manipulation may be seemed as less effective in this ED.

I. Procedure
Six conditions were presented one after the other, in the following order: 1) private technical information, 2) public technical information, 3) private explanatory information, 4) public explanatory information, 5) private neutral information, 6) public neutral information. Each condition lasted for four weeks. Participants were randomly assigned to the six conditions, depending on the date of their arrival at the ED. Each condition included about one sixth of the participants.

While waiting in the ED's waiting area, participants were exposed to information regarding the ED. Participants in the public condition were exposed to large signs, while participants in the private condition received pamphlets that

were handed out in person. Participants were exposed to signs/pamphlets containing information suitable to each of the three condition types: technical, explanatory or neutral (see "Tools").

All participants were approached while waiting in the ED waiting area. They were asked to fill out a short questionnaire (see Appendix 1) and received a sweet as a gratitude. Participants received a short oral explanation about the research's objective, specifically being told that the research was related to an attempt to improve the ED's service quality. After participants finished filling out the questionnaires, they received the sweet. Following completing the questioners, they were told they may contact the researcher afterward, for further information regarding the study purposes. Participants were not asked to provide any identifying information, except for their gender and age.

Results:-
J. Preliminary Analysis
Data from 229 participants were omitted from the analysis as they filled out less than 80% of the questionnaire. Furthermore, as the study aimed to include only participants at the age of 18 or older, 16 participants who were under the age of 18 years old, were omitted as well. Finally, missing data was also omitted from the analysis.

K. Main Analysis
Moderations in the study were analyzed using a bootstrapping method. Out of the study's entire sample, 1000 random samples were retrieved to form new distributions. These distributions were used to estimate the tested estimators. As is customary in bootstrapping, moderation was assessed with confidence intervals, meaning, estimators out of bounds of the confidence intervals were considered significant and of a different population. In order to perform this analysis, "PROCESS procedure" supplement for SPSS was used. This add-on is a macro supplement developed by Andrew Hayes (2013) which contains all the necessary tests for moderation analysis.

The hypotheses were as follows:
Hypothesis 1 - NA would be positively linked to aggressive tendencies of patients and escorts.
Hypothesis 2 - The type of information would moderate the relationship between NA and aggressive tendencies, that is, the relationship would be weakest for participants who would receive explanatory information, stronger for participants who would receive technical information, and strongest for participants who would receive neutral information.
Hypothesis 3 - The format of presentation would moderate the moderating effect of the type of information on the relationship between NA and aggressive tendencies. That is, the effect would be different for participants who would receive information publicly, and for participants who would receive information privately.

The following table shows correlations between the main study measures as well as descriptive statistics.

Table 1:- Correlations, Means, and standard deviations of main study measures

| Measure	1	2	3	4	5	6	Mean (standard deviation)
1. Aggressive Tendencies							**2.22 (1.48)**
2. NA	.594**						**2.01 (1.46)**
3. Type of Information (0-explanatory, 1-technical)	-.008	.001					
4. Type of Information (0-technical, 1-neutral)	-.002	.024	-				
5. Type of Information (0-other, 1-neutral)	.000	.032	-				
6. Type of Information (0-explanatory, 1-neutral)	-.010	.025	-	-			
7. Format of Presentation (0-private, 1-public)	.010	-.028	-.129**	-.043	-.106**	-.171**	

*p<.05, **p<.01

As seen in table 1, aggressive tendencies were positively related to NA (r=.594, p=.000). That is, the higher NA was, the higher aggressive tendencies were.

In order to examine these hypotheses, a moderated moderation model was applied and analyzed. NA was the independent variable, while the type of information and format of presentation entered into the model as moderators. The dependent variable was aggressive tendencies, while sex, hospital, and age were controlled variables. Hypothesis 1 was tested estimating the NA coefficient; hypothesis 2 was tested estimating the type of information and NA two-way interaction; finally, hypothesis 3 was tested estimating three-way interaction between NA, type of information, and format of presentation. As for hypothesis 1, NA was positively related to aggressive tendencies (B=0.35, p=.000, LL=0.63, UL=1.54), which supports hypothesis 1. In order to examine the moderation effect discussed in hypothesis 2, the type of information was re-coded into four dummy variables, where one dummy variable compared explanatory and technical information, the second dummy variable compared technical and neutral information, the third dummy variable compared explanatory and neutral information, and the fourth dummy variable compared neutral and "other" information (which includes both explanatory and technical information together).

Results show no significant interaction between the type of information and NA in the first comparison (B=0.05, p=.433, LL=-0.19, UL=0.08), meaning, explanatory and technical information did not have a different impact on the association between NA and aggressive tendencies. Moreover, the second comparison, between neutral and technical information, did not yield a significant effect either (B=0.02, p=.713, LL=-0.10, UL=0.15), meaning, neutral and technical information did not have a different impact on the association between NA and aggressive tendencies. In addition, the third comparison did not yield a significant effect either (B=-0.03, p=.604, LL=-0.16, UL=0.09). That is, explanatory and neutral information did not have a different impact on NA and aggressive tendencies association. Finally, a fourth analysis comparing neutral and the other two types of information was conducted. The analysis did not yield a significant NA-by-type of information interaction (B=0.03, p=.606, LL=-0.08, UL=0.14), which means neutral, as opposed to the other types of information, did not have a different impact on NA and aggressive tendencies association. Therefore, hypothesis 2 was rejected, as no significant NA-by-type of information interaction was found. The following graph presents aggressive tendencies as a function of NA and the type of information.

Graph 1:- Aggressive tendencies as function of NA and type of information
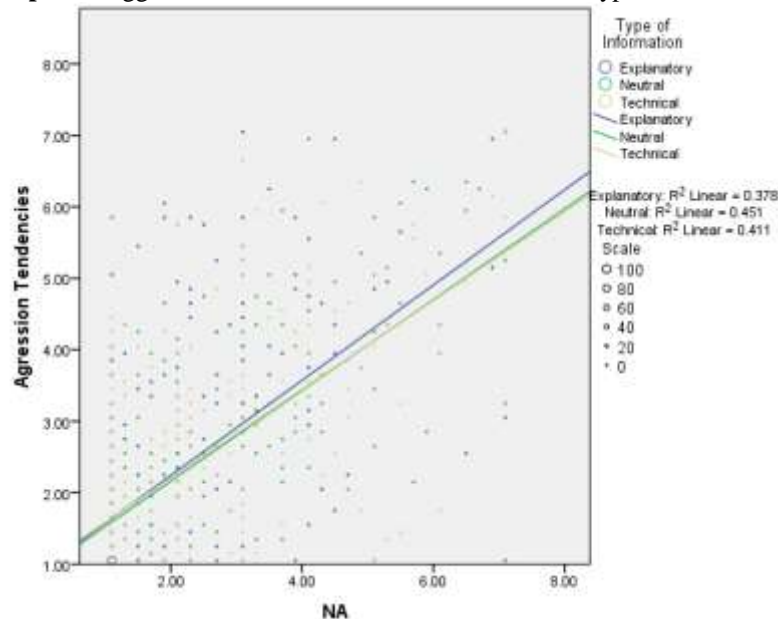
As mentioned above, hypothesis 3 was tested estimating the three-way interaction between NA, type of information, and format of presentation. This interaction was found to be significant (B=0.31, p=.020, LL=0.05, UL=0.56). Further examination of the interaction revealed a significant two-way interaction among private condition (B=0.19,

p=.049, *LL*=0.001, *UL*=0.37), but not among public condition (*B*=-0.12, *p*=.185, *LL*=-0.30, *UL*=0.06). That is, among private condition the neutral information (*B*=0.63, *p*=.000, *LL*=0.49, *UL*=0.77) was associated with stronger effect compared to technical or explanatory information (*B*=0.44, *p*=.000, *LL*=0.32, *UL*=0.57), whereas among public condition no such differences at the impact of type of information was found. Hence, hypothesis 3 was confirmed. The following graph presents aggressive tendencies as a function of NA, type of information, and format of presentation.

Graph 2:- Aggressive tendencies as function of NA, type of information, and format of presentation
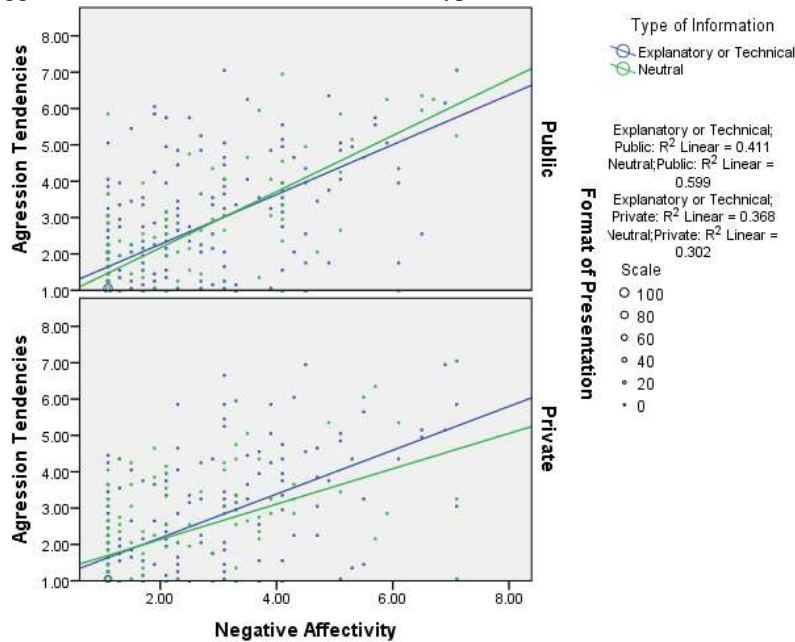
L. Main Results
Results show that NA was positively related to aggressive tendencies. Furthermore, a three-way interaction was found in the private condition. Neutral information, as opposed to other types, was associated with a stronger moderating effect on the relationship between NA and aggressive tendencies, whereas among the public condition no such effect was found.

Discussion:-
Patients' and escorts' aggression toward medical staff in the ED is a severe issue (Crilly, Chaboyer, & Creedy, 2004; Hodge, & Marshall, 2007), with a significantly high rate of occurrence (see Behnam, Tillotson, Davis, & Hobbs, 2011; Crilly, Chaboyer, & Creedy, 2004; Landau, 2004) and has highly detrimental personal, organizational, and financial consequences (Bourn, Maxfield, Terry, & Taylor, 2003; Farrell, Bobrowski, & Bobrowski, 2006). The current study is somewhat of a pioneering one: it is one of the first field studies to examine the causes of patients' and escorts' aggression toward medical staff in the ED, and to suggest a relatively elaborate tool of information provision that may reduce this problem.

The results of this study provided confirmation for the relationship between NA and aggressive tendencies, as NA and aggressive tendencies were found to be positively related. However, it provided only partial confirmation for the rest of the hypotheses. Inconsistent with the second hypothesis, no significant interaction between the type of information and NA was found. Consistent with the third hypothesis, a three-way interaction was found between NA, type of information and format of presentation. Specifically, the interaction was found only among the private condition, whereas among the public condition, no differential impact of type of information was found. Inconsistent with the second hypothesis, among the private condition, neutral information was associated with a stronger moderating effect on the relationship between NA and aggressive tendencies, while explanatory and technical information did not have such an effect.

The confirmation of the first hypothesis, regarding the relationships between NA and aggressive tendencies, is consistent with Berkowitz's Cognitive Neoassociation model (1989), which proposes that NA leads to aggressive tendencies. It is also consistent with studies that demonstrate the relationships between NA and aggression (e.g Twenge, Baumeister, Tice, & Stucke ,2001; Verona, & Curtin, 2006). An alternative explanation to this finding may be that both NA and aggressive tendencies were derived from a sense of injustice, that is, the relationship between NA and aggressive tendencies is spurious in nature. According to this explanation, a sense of injustice caused patients and escorts to become both more aggressive and to feel greater NA. However, given the wide theory and empirical evidence describing the relationship between NA and aggressive tendencies, the possibility that patients' and escorts' aggressive tendencies were not related to their NA seems unlikely. Even in cases where aggressive tendencies were derived from a sense of injustice, they may also have been related to other factors as well, such as NA.

The fact that the type of information did not have an impact on the relationship between NA and aggressive tendencies, except for the case when neutral information was presented privately, may have had several causes. One explanation may be that the explanatory and technical information that was used in the current study was not suitable for increasing the sense of justice. Explanatory information has indeed elaborated on the ED's procedures of accepting patients to the ED and treating them; however, it only explained what happens when everything in the ED works flawlessly. It did not elaborate on cases of undesired outcomes (e.g., delays, mistakes). Therefore, it is possible that some of the patients and escorts who may have had to face such flaws, did not receive suitable answers. Thus, these patients' and escorts' sense of justice was not improved, and so, the relationship between their NA and aggressive tendencies was not reduced. Future research might investigate the influence of explanatory information, which also includes explanations for possible flaws in the ED's function.

As for technical information, it may be that the operational definition of technical information in the current study did not fit its original theoretical definition. In Morrison's study, technical information was defined as "information about how to perform required job tasks" (1993). In the current study, this definition was adapted for the ED's setting, and its operationalization included information about locations of central areas of the hospital, details of administrative offices departments, and so on. It may be that the new operationalization did not have a sufficient focus on instructions of performing specific tasks that are relevant to ED's visitors (for example, what forms patients and escorts should fill out in order to receive medical care as soon as possible).

Regarding neutral information, it is possible that this kind of information has an unexpected effect of distraction, which may have led to emotional regulation of NA, when it was presented privately[2]. According to Gross' Process Model of Emotion Regulation (1998), distraction is one form of emotion regulation processes, in which attention is focused on non-emotional aspects of the situation or it is moved away from the immediate situation. This notion was supported by studies (e.g, Denson, Moulds, & Grisham, 2012; Johnstone, & Page, 2004). Denson, Moulds, and Grisham, (2012) investigated the effect of emotion regulation strategies on anger experience. Participants recalled an anger-inducing memory and were asked to engage in given strategies of emotion regulation. The study showed that distraction helped in rapid reductions in anger experience. Johnstone and Page (2004) explored the effect of distraction on anxiety among spider phobics, who were exposed to in vivo exposure sessions. Results showed that participants who underwent the exposure while having stimulus-irrelevant distracting conversation with the experimenter, showed greater reductions in subjective fear.

Therefore, it may be that the neutral information caused the ED's visitors to become more distracted from the unpleasant situation of waiting for medical care in the ED, and thus helped to regulate their negative feelings, that is their NA. Further, since NA was generally decreased, it may be that the relationship between NA and aggressive tendencies was decreased as well.

As for the effect of private presentation, it is possible that providing information in a personal manner may be perceived by patients and escorts as some form of personal attention and attentiveness, which may further have increased their sense of satisfaction. The relationship between medical staff's personal attention or attentiveness, and patients' satisfaction has been demonstrated by several studies (e.g, Ried, Wang, Young, & Awiphan, 1998; Thrasher, & Purc-Stephenson, 2008). Thrasher and Purc-Stephenson (2008) measured patients' satisfaction regarding nurse practitioners' care in EDs in Canada, and revealed that patients' satisfaction was affected by the

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[2] an explanation considering the effect of the private presentation will be discussed in the next section.

nurses' attentiveness. Ried, Wang, Young and Awiphan (1998) investigated the relationship between patients' satisfaction and their perceptions of the personal attention paid to them by pharmacists, and found that personal attention was significantly related to patients' satisfaction. Therefore, it is possible that the increase in patients' and escorts' satisfaction has improved their general emotional state, and thus may have decreased their NA. Further, this may have lessened the relationship between NA and aggressive tendencies.

M. Limitations

Even though the current study has some interesting findings, it has several limitations. The study investigated aggressive tendencies, rather than aggressive behaviors. In other words, the study focused on a more implicit and probably less lethal form of violence, compared to aggressive acts. Although Fischbein's and Adjzan's Theory of Reasoned Action (1980) supposes that intention is linked to behavior, it may be that this relationship is not full. Therefore, the findings may be applicable to the case of aggressive tendencies, however, they may not be applicable to the more intense problem of patients' and escorts' explicit violence.

Another limitation relates to patients and escorts who refused to participate in the study. Since they did not fill out the questionnaire, there is no available data that could have been essential in uncovering their profile. Moreover, it is possible that individuals unwilling to cooperate, may have had the most significant levels of NA (namely, they might have been more frustrated, angry, anxious, etc.). Therefore, the study cannot provide any conclusion regarding the effect of the type of information and its format of presentation on the levels of NA and aggressive tendencies of these individuals, who may theoretically be at the highest risk of greater aggressive tendencies, or even aggressive behaviors.

N. Implications

The current study has several implications. First, this is the first field study which have investigated the influence of the concrete features of information which is given in order to lessen patients' and escorts' aggression toward medical staff in the ED. In that manner, the study contributes some principles for creating an applicable tool of information provision, for diminishing this severe phenomenon: providing patients and escorts with neutral information in a personal manner.

Furthermore, the study provides further evidence for the relationship between NA and aggression. It was shown in the past that NA increases aggression (Denson, 2011; Tice, & Stucke, 2001; Verona, & Curtin, 2006). The study's empirical evidence supports this notion, as NA was found to be linked to aggressive tendencies. Thus, the study provides an empirical support for generalizing Berkowitz's Cognitive Neoassociation model (1989) to the specific context of the ED, and it demonstrates that NA plays an important role in the aggressive tendencies of ED's visitors toward medical staff.

Further, the findings of the current study demonstrate why EDs' management and medical staff should invest more energy and resources in providing patients and escorts with a greater deal of personal attention, as it may help to improve ED's visitors' feelings, and thus decrease their aggression toward the medical staff.

Finally, the current study shows that there is a need for more research on the effect of personal attention on patients' and escorts' aggression toward medical staff in the ED. Moreover, it also demonstrates the need for developing the knowledge which links between aggression of patients and escorts and the presentation of neutral information as a means for emotion regulation, as this point is still theoretically unclear.

Conclusion:-

The current study has focused on a crucial problem of patients' and escorts' aggression toward medical staff in the ED. The study has shown that aggression in the ED is related to NA. Furthermore, the study demonstrated that the combination of neutral information and private presentation may help lessen this relationship. By presenting neutral information in a personal manner, is it possible that patients and escorts in the ED would experience a greater sense of personal attention, and have their NA better regulated. Further, this information presentation may reduce patients' and escorts' aggression toward medical staff.

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