

GRİP AŞISI OLMADA BİREYSEL FARKLILIKLARIN VE NORMLARIN ROLÜ

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ÖZ: Grip aşılama oranları, müdahalelere ve kamu spotlarına rağmen istenen seviyenin altında kalmaktadır. Ayrıca, son zamanlarda aşı karşıtı hareket de artmaktadır. Ayrıklık yönetimi kuramı (AYK), insanların diğerlerinden ayırt edilebilecek olumlu bir benlik imajı elde etmeye ve sürdürmeye çalıştıklarını ileri sürmektedir. Bu, toplumun normdan sapmaları nasıl algıladığına odaklanarak mümkündür. Bu çalışma, grip aşısı olma niyetini AYK çerçevesinden, benzersiz olma ihtiyacı, ait olma ihtiyacı, büyük beşli, algılanan grip riski ve algılanan normları dahil ederek incelenmektedir. Bulgular, grip aşısı yaptırmamanın norm olduğu ve grip aşısı yaptırmayan kişilerin onaylanmadığının vurgulandığı durumlarda aşı olma niyetinin daha yüksek olduğunu göstermiştir. Ayrıca, yüksek uyumluluk ve yüksek grip riski algısı, aşılama niyetlerinin önemli yordayıcıları olarak görülmüştür. Çalışmanın bulgularına dayanarak aşılamanın artırılmasına yönelik müdahalelerin normatif bir fikir birliğini vurgulaması ve algılanan duyarlılığı artırmaya odaklanması önerilebilir.

Anahtar Kelimeler: Grip, Aşı, Ayrıklık Yönetimi Kuramı, Norm, Mesaj Çerçeveleme,

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THE ROLE OF INDIVIDUAL DIFFERENCES AND NORMS IN FLU VACCINATION

ABSTRACT: Flu vaccination rates remain below the desired, despite the interventions and public service announcements designed to increase them. Furthermore, an anti-vaccination movement has been on the rise recently. The deviance regulation theory (DRT) proposes that people try to achieve and maintain a positive self-image that can be distinguished from others. The way to attain this goal is to focus on how society perceives deviants. The current study examines flu vaccination intentions from a DRT framework, including the need for uniqueness, need to belong, the Big Five, perceived risk of flu, and perceived norms. The results indicated that people are more likely to get vaccinated when getting the flu vaccination is the norm, and when people are not approved otherwise. Moreover, higher agreeableness and a higher perception of susceptibility to flu were significant predictors of vaccination intentions. Overall, interventions on increasing vaccination should emphasize a normative consensus and increase perceived susceptibility.

Key Words : Flu, Vaccine, Deviance Regulation Theory, Norm, Message Frame,

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1. INTRODUCTION

Flu, or influenza, is a contagious disease that can even result in hospitalization and death in severe cases. Everyone has a risk of catching the flu, and vaccination is recommended to protect oneself (Grohskopf, Sokolow, Olsen, Bresee, Broder, & Karron, 2015). The Turkish Statistical Institute indicate in 2016, that the vaccination rate decreased from 3.3% (2014) to 2.6% (Turkish Statistical Institute, 2017). It was 20% in the United States (Centers for Disease Control and Prevention [CDC], 2017). Essentially, unvaccinated individuals are at higher risk of catching the flu and transmitting it to others, especially to those who are at higher risk such as older and younger people, pregnant women, and people with certain health conditions. Therefore, identifying ways to increase flu vaccination is a pressing issue for public health.

Some psychological theories have been applied to flu vaccination to understand the intention-behavior link in flu shot behavior, its associated cognitive mechanisms, and to promote it. For instance, the theory of planned behavior and the health belief model (e.g., Agarwal, 2014; DaCosta, DiBonaventura, & Chapman, 2005; Godin, Vezina-Im, & Naccache, 2010; Gorman, Brewer, Wang, & Chambers, 2012) were tested for flu shot behavior. In studies where the norms of vaccination were tested, one consistent result was the positive correlation between the norms and the intentions or behaviors (e.g., Godin et al., 2010; Gorman et al., 2012).

Conforming to the societal norms have been studied extensively within psychology, as well. However, recently, deviance has also attracted the attention of the researchers. Among the theories that explain the motivations behind deviance, the deviance regulation theory (DRT; Blanton, Stuart, & Van den Eijnden, 2001) focused on the environmental/societal elements affecting the decision to conform or to deviate. They suggest that people engage in specific behaviors to hold a better self-image and seek for the behaviors that would make them look different from the others and be approved for that difference (Blanton & Christie, 2003). Therefore, individuals attend to the consequences of being different in a positive way and act upon them.

This insightful theory was first tested for flu vaccination behavior, where the individuals' decision to get vaccinated was measured using different message frames and norm conditions (study 1, Blanton et al., 2001). Although the theory was studied in other health communication domains (e.g., condom use), the individual differences that might influence the effectiveness of the behavioral norms and the social approval cues have not been examined yet, to the best of our knowledge. Departing from this gap in the literature, we had two main aims in the current study. The first aim is replicating study 1 of Blanton et al. (2001) by testing the message frames and different norm conditions in a country where the flu vaccination rates are low (i.e., Turkey; OECD, 2020). The second aim is exploring the roles of the need for uniqueness, the need to belong, the Big Five, perceived risk of flu, and perceived descriptive and injunctive norms on the intentions to get flu shot.

1. Theoretical Framework

1.1. Deviance Regulation Theory

Blanton and colleagues (2001) proposed the deviance regulation theory with the fundamental premise that not the behavioral norms, but how people appreciate the deviant

behaviors affect individuals' behavioral decisions. In other words, they argue that not conforming to, but deviating from the norms would distinguish people from others. Therefore, they should be attentive to the information about the degree of approval they can get by deviating from the norm, and act accordingly.

Supporting their suggestion, in their first study, in one group, they applied the unhealthy norm manipulation that claims flu shot is not common among the university students. Besides, the participants received either a positive-framed message, which focused on the good attributes of deviant that is the student who gets a flu shot, or a negative-framed message, which focused on the bad attributes of a student who follows the norms and does not get flu shot. They found that intentions to get a flu shot were higher in the positive-framed message than the negative-framed message. For the other group of participants, they applied the healthy norm manipulation that flu shot is common among the university students. In this second group, what the result was the opposite: the negative-frame was the most effective one in increasing the intentions to get a flu shot. In the current research, the purpose is to try to increase the effectiveness of these health communication frames by segmenting the target groups, the society, in terms of their individual differences.

1.2. Uniqueness

Uniqueness, as an individual difference characteristic, has attracted more attention after Snyder and Fromkin's (1977) distinction of abnormal deviance and positive uniqueness. They suggested that everyone has a need to be different from others, and this is not necessarily a malicious behavior, but sometimes just about trying to feel unique and special. Studies uncovered that when individuals perceive too much similarity, they change their attitudes towards the opposite of the other people (Weir, 1971), physically distance themselves from others (Snyder & Endelman, 1979), and conform less (Duval, 1972). Also, the optimal distinctiveness theory (ODT; Brewer, 1991) argues that people want to be distinct from others to some extent, neither similar nor distinct. Snyder and Fromkin (1977) offered that there should be dispositional differences in peoples' motivation for uniqueness. In the current study, it is expected that this individual difference variable, specifically high need for uniqueness, would lead people to be more sensitive to the message frame and norm cues.

1.3. Belongingness

In addition to the need to be unique, people have an innate need to hold some positive relationships. The belongingness hypothesis suggests that innately, people strive to form and maintain at least a minimum number of important and satisfying relationships (Baumeister & Leary, 1995). Baumeister and Leary (1995) point that Freud mentioned this need (1930) related to the sex drive; by Maslow (1968) as in the middle of his needs hierarchy, named love and belongingness needs; and by Bowlby (1969) at the core of the attachment theory.

This desire to belong may be related to various characteristics. Pickett and colleagues (Pickett, Gardner, & Knowles, 2004) have found that individuals with a high need to belong are more sensitive to social cues. Most probably, these individuals attend to the social cues to adjust their behaviors accordingly. Moreover, the belongingness need triggers many types of behaviors, such as conformity (Moreland & Levine, 1989) and self-

presentation (Baumeister, 1982). While conforming to the group may serve as an affiliation means, the need to belong might motivate people towards deviating in a desirable way via self-presentation, too, considering from deviance regulation perspective. Although these two seem to be the opposite of each other, they have the common ground of helping to achieve a desirable self-image through conforming or through meaningfully deviating. In the present context, we expect that the need to belong would motivate people towards following the message frames and norm conditions that suggest acceptance in return for specific behavior.

1.4. The Big Five

The Big Five personality classification is the dominant approach in personality research. As the successor of many measurement attempts, the Big Five Inventory (John, Donahue, & Kentle, 1991) has been commonly used as its reliability and validity are approved in the literature. The factor structure has also been agreed on as openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism after many studies, including the cross-cultural ones. Moreover, their predictive power in social and interpersonal areas have been agreed upon.

Concerning deviance and conformity, DeYoung and colleagues proposed a ‘big two’ that predicts conformity (DeYoung, Peterson, & Higgins, 2002). They clustered the Big Five factors into two higher-order factors: stability, which is composed of emotional stability, agreeableness, and conscientiousness, and plasticity, which is composed of openness and extraversion. In this classification, stability positively and plasticity negatively predicts conformity. Depending on these results, the DRT framework is also expected to be affected similarly from these personality characteristics. That is, emotional stability, agreeableness, and conscientiousness would lead to conforming to the flu shot norms, and openness and extraversion would lead to deviating from the flu shot norms.

1.5. Perceived Risk

The studies focusing on the perceived risk in the context of flu vaccination (e.g., Ferguson & Gallagher, 2007; Han, Zhang, Chu, & Shen, 2014; Weinstein, Kwitel, McCaul, Magnan, Gerrard, & Gibbons, 2007) have uncovered substantial information about risk perception predicting vaccination, and moderating the relationship between several message frames and vaccination intentions. In the present study, besides the message frames and the personality characteristics, the perceived risk of flu is also expected to have a meaningful effect on individuals’ perception of and approach to flu, and therefore to the current manipulations.

2. The Current Study

2.1. Aims and Hypotheses

In the present study, we aimed to explore the role of the aforementioned individual differences in the effectiveness of the norm and the message frame manipulations’ predictive power on deviance from and conformity to the vaccination norms.

Specifically, the following hypotheses were suggested:

1. When the norm is to get a flu shot, participants' intentions to get a flu shot are higher in negative-message frames than positive-message frames.
2. When the norm is not to get a flu shot, participants' intentions to get a flu shot are expected to be higher in positive-message frames than negative-message frames.
3. High need for uniqueness, need to belong, and agreeableness, and low neuroticism, openness, and extraversion participants are expected to be affected more from the conditions mentioned in hypotheses 1 and 2, compared to low need for uniqueness, need to belong, and agreeableness, and high neuroticism, openness, and extraversion participants.

2.2. Participants and Procedure

The data were collected in 2016 Spring semester, after obtaining approval from the Human Subjects Ethics Committee of the Middle East Technical University. Although 122 students were recruited in return for extra credit, 6 participants excluded from the analyses since they had either a chronic illness that requires a flu shot in every flu season, or any other illness, such as allergies, preventing them from getting a flu shot. Among the remaining 116 participants, 88 were female (75.9%); ages ranged between 18 and 27 ($M = 21.47$, $SD = 1.74$). Moreover, the majority of them (98) were psychology majors (see Table 1).

Table 1: Demographic Characteristics of the Sample

Variables	Range	<i>M</i>	<i>SD</i>	<i>N</i>	%
Age	18-27	21.47	1.74		
Gender					
Female				88	75.9
Male				28	24.1
Department					
Psychology				98	84.5
Other departments				18	15.5
Past behavior					
Had flu shot in the past 3 years				18	15.5
Did not have flu shot				98	84.5

Participants were randomly assigned to the four conditions of the study: healthy norm/positive frame, healthy norm/negative frame, unhealthy norm/positive frame, unhealthy norm/negative frame. The distribution of participants to conditions was balanced (see Table 2).

Table 2: Number of Participants in Each Condition

		Norm	
		Positive Norm	Negative Norm
Message Frame	Positive Frame	32	27
	Negative Frame	27	30

After providing their informed consent, the participants read the cover story, read two newspaper articles, and reported their opinions about whether these two articles are worth publishing in the university bulletin. Then, as a norm manipulation, they read a newspaper article about the flu shot and answered the manipulation check question. Later, they read one of the message frame vignettes and were asked two filler questions to back up the cover story, and one injunctive norm question. The rest of the survey included intentions to get a flu shot, past behavior of getting flu shot, perceived risk of flu, the Big Five, need to belong, self-attributed need for uniqueness, and the demographics.

2.3. Instruments

2.3.1. Norm Manipulation and Manipulation Check

Exactly as Blanton and colleagues (2001) had in their Study 1, the participants read a short newspaper article about university students' higher risk of getting flu, the importance of flu shot, and the approximate percentage of university students who get flu shot; namely, in healthy norm condition, participants read 61% of the students get flu shot, and in unhealthy condition, only 39%.

As a manipulation check, the participants reported their perception about the likelihood of a regular university student to get a flu shot on a 7-point scale.

2.3.2. Message Frame

For the message frame manipulation, the participants read another short newspaper article. The article explained a bogus study about either the positive attributes related to people who get flu shot, such as thoughtful and responsible, but not selfish or negligent (positive frame condition) or the negative attributes related to people who do not get flu shot (negative frame condition).

As a manipulation check, an injunctive norm question asking the participants' perceptions of how much the society would approve a university student getting a flu shot was asked on a 7-point Likert scale.

2.3.3. Intentions to Get Flu Shot

As the dependent variable of the current study, participants indicated their intention to get a flu shot by answering three questions: "What is your likelihood of getting a flu shot in the next flu season?" "How willing are you to get a flu shot in the next flu season?" and "Do you consider getting a flu shot in the next flu season?" Although Blanton et al. (2001) had only the first question as the dependent variable, we included the last two questions for reliability purposes. The questions were answered on a 7-point Likert scale, as higher values indicate greater intention ($\alpha = .91$).

2.2.4. Perceived Risk

Perception of flu risk was measured with four items adapted from the previous studies (Han et al., 2014; Morton & Duck, 2001) on a 5-point Likert scale, higher scores indicating higher risk perception. Sample items would be “How serious is the flu for you?” and “How likely are you to get the flu?” The reliability of the scale in the previous studies was satisfactory ($\alpha = .82$, in Han et al., 2014), so it is in the current study ($\alpha = .73$).

2.2.5. The Big Five

The 44-item Big Five Inventory (John et al., 1991) comprises five personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. These five dimensions were measured with 44 items, such as “I am someone who is talkative.” (extraversion), “...is helpful and unselfish with others.” (agreeableness), “...does a thorough job.” (conscientiousness), “...is depressed, blue.” (neuroticism), “...is original, comes up with new ideas.” (openness). The participants indicate their agreement with these items on a 5-point Likert scale, ranging from “1 = strongly disagree” to “5 = strongly agree.” The Turkish adaptation (Sümer, Lajunen, & Özkan, 2005) was used in the current study. Cronbach’s alphas for each dimension were reasonable, ranging from .68 to .80.

2.2.6. The Need to Belong

Individuals' need to belong was measured with the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013). The scale was composed of 10 items and measured with a 5-point Likert scale, ranging from “1 = strongly disagree” to “5 = strongly agree.” Sample items would be “I try hard not to do things that will make other people avoid or reject me.” and “It bothers me a great deal when I am not included in other people's plans.” Cronbach's alpha of the scale typically ranges between .78 and .87 (Leary et al., 2013). In the current study, the reliability was very high, $\alpha = .87$.

2.2.7. The Need for Uniqueness

The uniqueness need was measured with an adaptation of the self-attributed need for uniqueness scale (Lynn & Harris, 1997). Sample items would be “How different do you prefer to be from other people?” and “How often do you intentionally do things to make yourself different from those around you?” The self-attributed need for uniqueness was measured with four items on a 5-point Likert scale, ranging from “1 = not at all/no” to “5 = extremely/always.” In the original study, the scale was found to be reliable, $\alpha = .80$. In the current study, the reliability was also very high, $\alpha = .81$.

2.2.8. Descriptive Norm

Descriptive norm about flu shot was measured with a single item asking, “What is the percentage of university students that get flu shot?”

Table 3: Means, Standard Deviations, and Correlations for the Study Variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Intention	2.59	1.23												
2. Norm Condition¹			0.00											
3. Message Frame²			-0.20*	0.07										
4. Uniqueness	3.33	0.73	0.16	0.00	0.08									
5. Belongingness	3.33	0.72	0.08	-0.01	0.03	0.04								
6. Extraversion	3.40	0.72	-0.14	0.04	0.17	.033**	0.05							
7. Agreeableness	3.65	0.54	0.32**	0.00	-0.01	-0.04	.027**	-0.25**						
8. Conscientiousness	3.36	0.60	0.17	-0.03	0.06	-0.05	0.04	0.00	0.24*					
9. Neuroticism	2.93	0.75	-0.01	-0.03	-0.14	-0.07	0.18	-0.23*	-0.26**	-0.24*				
10. Openness	3.64	0.64	0.14	0.01	0.05	0.49**	-0.10	0.26**	0.05	0.00	-0.11			
11. Perceived Risk	2.69	0.64	0.43**	-0.03	-0.13	0.18	0.12	0.04	0.10	0.14	0.14	-0.08		
12. Descriptive Norm	26.90	17.49	0.27**	0.08	0.07	0.02	-0.13	-0.08	0.06	-0.05	-0.08	-0.02	0.06	
13. Injunctive Norm	4.32	1.46	0.32**	0.05	-0.03	0.24*	-0.01	0.13	0.07	0.00	-0.10	0.15	0.17	0.34**

N = 116. ¹Coded 0 = unhealthy, 1 = healthy. ²Coded 0 = negative, 1 = positive. *p < .05. ** p < .01

2.2.9. Demographics

In the last section of the survey, the following demographic questions were asked: age, gender, department, whether they have a chronic illness that requires a regular flu shot, or an illness –such as allergies– preventing them from getting a flu shot, and whether they had a flu shot in the last three years, as a past behavior measure.

3. Results

Table 3 represents the descriptive statistics and correlations for all study variables. Firstly, the manipulation check was conducted, and then analyses proceeded with the hypothesis tests.

3.1. Manipulation check

The norm manipulation conditions did not reveal significant differences in manipulation check questions. Participants who got healthy and unhealthy norm manipulations did not differ from each other in the manipulation check question that asked them to indicate the likelihood of getting a flu shot ($F(1,114) = .319, n.s.$). However, we proceeded with the hypothesis tests.

3.2. Testing the Hypotheses

At first, 2 (norm) x 2 (message frame) ANOVA was conducted to investigate the effects of message and norm conditions in intention to get flu shot (hypotheses 1 and 2). A 2 (norm) x 2 (message frame) ANOVA was conducted to test whether the intention to get a flu shot was affected by the message frame conditions. The results revealed that the message frame (positive vs. negative) has a significant main effect on the intentions to get a flu shot, $F(1,112) = 4.93, p = .03, \eta^2 = .04$. That is, the participants in the negative message frame condition had significantly higher intention to get flu shot than the participants in the positive message frame condition. However, the main effect of the norm condition and the norm X message frame interaction effect were insignificant ($F(1,112) = .03, n.s.$ and $F(1,112) = .75, n.s.$ respectively). Therefore, the first two hypotheses were not supported by the current data. Consequently, the third hypothesis built on the confirmation of the first two could not be tested.

3.3. The Effect of the Perceived Norm

Since the manipulation check turned insignificant, and the interaction effect could not be observed, another approach was to take the perceived norm into account and split the data accordingly. The manipulation check question was recoded to create norm groups. Specifically, the values below 4 (the midpoint of 7-point Likert scale) were recoded as “not getting flu-shot” group, and above as “getting flu-shot” norm group. Then, the two-way ANOVA in section 3.2. was replicated. The results uncovered main effects of the norm and message frame conditions ($F(1,112) = 5.71, p = .02, \eta^2 = .05$; $F(1,112) = 5.99, p = .02, \eta^2 = .05$, respectively). That is, the group who believed getting flu shot is the norm ($M = 2.92, SD = 2.40$), and the group that received negative message frame ($M = 2.84, SD = 1.36$) had higher intention to get flu shot than the group who believed not getting flu shot is the norm ($M = 2.40, SD = 1.11$) and the group that received positive message frame ($M = 2.35, SD = 1.05$).

Table 4: Hierarchical regression coefficients

	Model 1			Model 2			Model 3			Model 4		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Norm Condition	0.04	0.23	0.02	0.05	0.22	0.02	0.07	0.21	0.03	0.01	0.19	0.01
Message Frame ¹	-0.50	0.23	-0.20*	-0.54	0.23	-0.22*	-0.50	0.22	-0.20*	-0.39	0.19	-0.16*
Uniqueness				0.29	0.15	0.17	0.32	0.17	0.19	0.07	0.16	0.04
Belongingness				0.13	0.16	0.08	-0.02	0.17	-0.01	0.05	0.15	0.03
Extraversion							-0.16	0.18	-0.09	-0.23	0.16	-0.13
Agreeableness							0.66	0.24	0.29**	0.44	0.21	0.19*
Conscientiousness							0.29	0.19	0.14	0.20	0.17	0.10
Neuroticism							0.11	0.17	0.07	0.01	0.15	0.01
Openness							0.14	0.20	0.07	0.31	0.18	0.16
Perceived Risk										0.66	0.16	0.34**
Descriptive Norm										0.01	0.01	0.19*
Injunctive Norm										0.13	0.07	0.16
R ²		.04			.08			.21			.41	
Adjusted R ²		.02			.04			.14			.34	

N= 116. *p <.05. **p < .0

¹Coded 0= negative, 1= positive.

3.4. Predictors of Intention

A hierarchical regression analysis was conducted to explore the effects of message frames, norm conditions, individual difference variables, descriptive and injunctive norms, and the perceived risk on the intention to get flu shot. In the first step of regression, the norm conditions and the message frame were entered. Secondly, uniqueness and the need to belong were entered. In the third stage, the Big Five personality dimensions were included. Finally, perceived risk, descriptive, and injunctive norms were entered into the model (see Table 4). Message frame, agreeableness, perceived risk, and descriptive norm were statistically significantly related to the intention to get a flu shot, partially supporting hypothesis 3 explaining 41% of the variance. However, norm condition, uniqueness, belongingness, extraversion, conscientiousness, neuroticism, openness, and injunctive norms were insignificant predictors across models.

4. Discussion

The purpose of the current study was to investigate the role of message frames, norms, and individual differences in increasing the intentions to get flu shots. We aimed to replicate the first study of Blanton and colleagues (2001), where they have shown the effectiveness of positively framed messages in negative (unhealthy) norm condition and negatively framed messages in positive (healthy) norm condition to increase the intentions to get flu shot. We predicted that the message frames and the norm conditions would have an interaction effect. Additionally, the need for uniqueness, need to belong, perceived risk of flu, agreeableness, neuroticism, openness, and extraversion are expected to play a role in the message frame and norm interaction.

The manipulation check did not differ across the norm conditions. One plausible explanation is that the participants might have relied on their real-life experiences rather than the suggested norms in vignettes. Alternatively, the participants might have inferred the question was asking their opinions before reading the newspaper article, or their observation without relying on the information they just received. With these alternative explanations in mind, we proceeded to the hypothesis testing, but the analyses did not support our predictions in the hypotheses.

The two-way ANOVA results suggest that only the message frame (positive vs. negative) had a significant effect on the intention to get flu shot. Participants who received negative-message frames had significantly higher intention to get flu shot than those in positive-message frame condition. That is, for the current sample, negatively framed messages (i.e., not getting flu shot is bad/irresponsible) resulted in a higher intention to get flu shot. The supplementary analysis also revealed a main effect of norm conditions. Nevertheless, we failed to replicate Blanton and his colleagues' (2001) original study. This inconsistent result with the original study might be due to a remarkably lower prevalence of flu vaccination rates in Turkey compared to the US (2.6% vs. 20%, respectively; CDC, 2017; Turkish Statistical Institute, 2017).

However, the effect of the perceived risk of flu over the intention to get flu shot was evident in the data. The critical role of perceived risk is beyond all the other predictors, that is the norms and the others' acceptance, and personality and other individual differences. The predictive power of perceived risk suggests that increasing the awareness of individuals' susceptibility to flu might be an essential step towards increasing the vaccination rates. The

perception of invulnerability could be reduced through tailored manipulations. These findings are in line with the expectation that higher perceived risk and higher descriptive norms are associated with a higher intention to perform a given behavior.

Apart from the perceived risk, the effect of the need for uniqueness, need for belongingness, the Big Five, perceived risk, and injunctive and descriptive norms over the intentions was tested. The results provided partial support to this hypothesis by indicating the effect of agreeableness and descriptive norms. It is not a surprise that people who perceive the norm in favor of getting a flu shot are more likely to get themselves (Godin et al., 2010; Gorman et al., 2012).

Hierarchical regression analysis revealed that the need to belong and the need for uniqueness were not significant predictors of intention to the flu shot. Among the Big Five personality dimensions, agreeableness was the only significant predictor of the intention to get flu shot. It is. The last model in hierarchical regression suggests that perceived risk and descriptive norms are significant predictors of intention to get flu shot. Interestingly the injunctive norm was not a significant predictor of the intentions. Together findings on the norms suggest that people's intention to get flu shot influenced by the behaviors of the people around them rather than the approval of the people around them.

Current findings have some implications for health communication in the current Covid-19 pandemic. Convincing the public to get Covid-19 vaccination will be an important health communication issue after the development of the vaccine. Designing public service announcements focusing on people's vulnerability (especially for young adults) and mentioning higher vaccination intentions among peer groups (establishing normative pressure) could serve as effective ways of increasing the vaccination rates.

Nevertheless, the current study is not free from limitations. Further studies can be conducted in a more controlled environment with more convincing newspaper articles as a cover story. Moreover, the manipulation check questions can also be revised for more valid and precise measurements. Furthermore, the current young sample (with the mean age of 21) may be feeling more invulnerable towards flu, or the risks of flu might be undermined in the young population. Therefore, the vaccination dynamics of old and young might differ. We suggest considering the findings of the current study with caution and testing these hypotheses in a community sample with a broader age range.

In conclusion, beyond all those manipulations, message frames, norms, and individual differences, perceived risk emerged to be the most important predictor of intentions in the current study. Not the personality characteristics or the belongingness and uniqueness concerns, but the individuals' flu risk perceptions seem to be the most critical factor that leads them to get a flu shot. Besides, the descriptive norm predicted the intentions significantly. Therefore, we might expect that individuals' perceptions of norms might already be shaping their decisions. Thirdly, the current results suggest that agreeable people are more inclined to get flu shot. Overall, the study sheds some light on the role of individual differences and the perceived norms in flu vaccination behaviors and intentions.

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