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Research article

The backfiring effect of fairness salience in health messages regarding food allergies and diabetes

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Abstract: Social media posts intended to increase empathy thereby garnering support for public policy that improves the health and well-being of vulnerable populations can make salient the fact that vulnerable populations' experiences are unfair. For example, children with food allergies or diabetes often do not have access to emergency medication and can be isolated and treated poorly by peers. Raising awareness of this disparity, especially when paired with an image of an afflicted child, was expected to increase empathy which could then drive improvements in healthcare policy. However, data from two experimental studies suggest that making injustice salient in such a persuasive appeal can backfire, having the opposite effect as intended. When injustice salience was paired with an image of a patient with food allergies or diabetes, participants, especially those who self-identify as politically conservative, felt less empathy and were less supportive of protective policies. This study seeks to understand the counterintuitive responses people have when presented with clear examples of disparities in conjunction with patient images.

Keywords: fairness; injustice; boomerang; backfire; empathy; policy support; disparities

1. Introduction

Mass media messages that elicit feelings of unfairness, or injustice, for a vulnerable population have the potential to increase empathy towards that group and garner support for favorable public policy. For example, a social media post about drinking and driving could include information on the death of an innocent passenger (an exemplar victim), highlighting that the passenger did nothing

wrong. That sense of unfairness may create a strong emotional response in the audience, which in turn is likely to result in prosocial behaviors such as policy support for alcohol-enforcement laws.

In two studies, the relationship between fairness salience and empathy for children with food allergies or Type I diabetes was examined. Also of interest was the relationship between empathy and support for protective policies for these children. As Besley [1] frankly stated, "fairness matters" (page 69). Besley explains that a sense of fairness can impact people's satisfaction with a decision more than the actual outcome of the decision. Additionally, the reason that fairness can be so influential in people's satisfaction with an outcome is that fairness indicates respect for group identity. In this sense, when people see an advertisement with an image of a relatable child with either food allergies or Type I diabetes, making injustice salient should lead to a desire for protective policies stemming from a sense of fairness.

However, for those of us who study social sciences, we know well that people do not always respond to health messages or other persuasive appeals in adaptive ways [2,3]. Thus, it is important that through empirical research we gain a better theoretical understanding of how the general public reacts to prosocial health messages that utilize injustice/unfairness salience in the context of different health conditions (in this case, food allergies and Type 1 diabetes). Understanding how this message characteristic may influence and interact with other message characteristics also has applied purposes as it can guide the creation of more effective persuasive appeals for prosocial health behaviors as well as other topics of persuasion.

1.1. Injustice salience

Perceived injustice can take several forms including situational, interpersonal, decisional/procedural, and informational, and a broad conceptualization of justice would include several of these. First, for situational injustice, for children with health problems, appeals can make salient the fact that their health condition is not their fault; rather the development of a condition like food allergies is simply bad luck. Second, procedural justice involves the perception of fairness regarding the procedures by which outcomes are established [4]. Third, interpersonal justice is perceived fairness regarding social sensitivity and interpersonal treatment [5]. Fourth, informational justice [6] involves the evaluation that authorities have provided adequate information needed to make a decision.

What we are calling "situational justice" involves the burden of having a health-related food restriction (such as Type 1 diabetes or food allergies) not being evenly distributed throughout the population. Some people will develop the health problem, and others won't. There was no person or group of people who decided who would and who wouldn't suffer from an ailment that is health related. Having no one to blame for the problem except for luck of the draw seems to make this type of fairness qualitatively different than other aspects of justice.

Interpersonal justice can be defined as fairness in treatment from peers or other social actors. It involves a sense that the decision maker is unbiased, truthful, and respectful [1]. Bullying is an example of intentional violation of interpersonal justice. Since this type of injustice does have a person or entity to be blamed for the injustice, it is also likely to result in a strong emotional response (e.g. anger or sadness) from observers.

For procedural justice, it is perceived fairness of procedures by which outcomes are established that determine if an action is fair or unfair. A fair situation would be one in which everyone had a

voice in the decision-making process [1]. This type of justice is impinged when vulnerable populations do not have a voice in decision-making.

Informational justice describes the accuracy and quality of explanations individuals receive. In the case of food allergies, it can be represented by a lack of information being provided to parents of elementary school-aged children or a lack of communication coming from the child's school.

It is possible that better understanding of these types of injustice increase the desire to engage in altruism. For example, the amount of protection or care that a person needs may play a role in how much empathy is felt toward them [7]. Additionally, perceptions of injustice may increase altruism independent of empathy. As an example, de Vignemont and Singer describe a hypothetical situation in which a political prisoner is being held under a dictatorship. Someone might want to help this prisoner escape, not because they feel empathy for the prisoner, but because they oppose the government.

1.2. Empathy

Hoffman [8] was one of the first to propose that empathy is the basis for altruistic motivation (motivation to help others as opposed to egoistic, self-serving motivations). Batson and Coke [9] later proposed the Empathy-Altruism Hypothesis, stating that empathic concerns can evoke motivation directed toward the ultimate goal of reducing the other's need. Indeed, research suggests that people help others more when they report feeling empathy for them [7].

In addition to interpersonal communication, empathy can play a role in policy support for prosocial issues encouraging people to support others in their community. For example, Johnson et al. [10] found that empathy mediated the relationship between stereotypical images in the news (images of Black people removing food and other items from stores after Hurricane Katrina) and support for public policy regarding victims of a natural disaster. In addition, Gault and Sabini [11] found that trait empathy predicted support for human service actions such as volunteering to support victims of toxic waste dumping. These studies support the notion that empathy is an important variable for prosocial behaviors.

It can be useful to study empathy both as a general trait and as a victim-specific state since it's possible that increases in empathy for an individual with specific traits may in turn lead to more general empathy for the afflicted group as a whole. For example, Batson and colleagues [12] found that when participants felt more empathy for a member of a stigmatized group, their attitude toward the group as a whole improved. They found similar results across different stigmatized groups, including people with AIDS, homelessness, and even violent criminals as a very stigmatized group [12].

1.3. Exemplars

Persuasive communication often includes exemplars, illustrative individual cases that are less valid than statistics or general information but more vivid [13]. These exemplars often aid in persuasion by putting a face to a problem. For example, persuasive appeals for blood donation often feature an image of a person who would benefit from receiving blood. The impact of exemplar images on persuasion can be attributed to the identifiable victim effect [14] as well as emotional contagion [15].

The inclusion of exemplars in persuasive messages for safety and health measures has established success when the goal of the persuasion is to convince people to engage in behaviors that are likely to improve their own health and well-being [16]. In this case, the exemplars serve as a reminder to the audience of what can happen to them if they do not engage in the proscribed behavior. However, we do not know as much about how the inclusion of an exemplar will impact persuasion when the goal is not to persuade people to help themselves, but to help others. In other words, while the use of an exemplar typically gives the audience the message "this could happen to you", for altruistic appeals, the inclusion of an exemplar reminds the audience that "this could happen to others". To better understand this, two scenarios were evaluated.

2. Study One

2.1. Introduction

2.1.1. Food allergies

The context we examine has its own substantive importance: Food allergies can cause anaphylaxis, a serious allergic reaction that is rapid in onset and can cause death [17]. In the US population, 8% of children under age 18 live with a food allergy [18], which averages two children per classroom. Serious food allergies can disrupt the lives of children and their families. For example, children with peanut allergy reported a lower quality of life than those with diabetes, often due to anxiety regarding the possibility of sudden fatality [19–21]. Children with nut allergies also report poor emotional, social, and psychological quality of life compared to healthy normative data [20,22,23]. There is also a burden on parents and other caretakers of food allergic children, who report distress related to guilt and worry, unresolved anger and sorrow, and long-term uncertainty [24].

Authorities on food allergies as a public health concern emphasize the importance of policies invoking cooperation of school authorities and other parents and children to protect the lives and well-being of affected children [25–28]. Therefore, we focus on support for such policies as our outcome of interest in this study scenario.

2.1.2. Injustice

People's support for a decision can be influenced by their perceptions of how fair the decision was [1]. Together, the four aspects of fairness discussed above (situational, interpersonal, procedural, and informational) should make participants feel that children with food allergies have been put in unfair situations, a problem that could be remedied by supporting decisions/policies that can rectify this imbalance. In this study, the goal is not to isolate the effects of the different types of injustice. Rather, the goal is to conceptualize these as being various possible dimensions of injustice and include as many dimensions as is possible in this initial attempt to shift perceived injustice in a health context.

H_1: There will be a direct, positive effect of injustice salience on policy support in food allergy.

2.1.3. Empathy

When presented with a persuasive appeal that contains an image of a child who has been negatively affected by food allergies, to make the injustice salient, readers will then likely experience a feeling of kinship or connection with the exemplar [29] which then would increase feelings of empathy. Also, given the existing literature that demonstrates that empathy can serve as a link between media and prosocial policy support [11], it is likely that people will support policies to help children with food allergies because of an increased empathy for them.

H2: People who see the version of the persuasive ad with injustice made salient will have higher support for protective policies through an increase in victim-specific empathy.

2.1.4. Exemplars

The reason we expect injustice salience to improve empathy is that the injustice is attributed to a group of people in victim status, so the use of an exemplar in the persuasive appeal will provide a face for that group of people. So, it is likely that the inclusion of the exemplar will interact with the injustice salience message characteristic.

H3: People who see the version of the ad with injustice salient will have stronger policy support for children with food allergies through an increase in empathy, only if they see a version with an exemplar.

2.2. Materials and methods

2.2.1. Study design

The study design was a 2 (unfairness made salient or not) × 2 (exemplar included or not) between-subjects factorial experiment. Participants saw one of the four versions of the visual ads with text and a related image, such as those commonly seen on social media sites. Thus, each participate saw either the ad that made injustice salient and showed an image of an exemplar, made injustice salient without an image of an exemplar, did not make injustice salient but did include an image of an exemplar, or did not make injustice salient nor include an image of an exemplar. They then answered questions about their support for policies relevant to children with food allergies in elementary schools.

2.2.2. Ethics approval of research

This research was approved by The Ohio State University Institutional Review Board, approval number 2016B0478.

2.2.3. Participants

The population of interest, parents of school-aged children, was recruited through Qualtrics online panels. With categorical independent variables and alpha set at 0.05, based on Cohen's recommendation [30] of a minimum of 0.80 for power and with $d = 0.5$, the power analyses results

yielded approximately 64 participants per group. With four groups, this brings the recommended total for the main study to 256. The sample consisted of English-speaking adults living in the U.S. who were caregivers of elementary school aged children. There were 151 females and 132 males (for a total of 283 participants) with ages ranging from 18 to 72.

2.2.4. Stimuli

Persuasive appeals relevant to health are often shown on social media sites [31]. Long narratives are not common on social media platforms as social media websites favor posts with more brief text, often combined with an image. In order to be consistent with this common text and image structure of communication messages on social media, persuasive appeals were presented as images with text and differed in two ways: (1) they either did or did not contain an image of a person to act as an exemplar for children with food allergies (versus a non-human photo), and (2) the wording of the message was altered to either include or not include that exemplar (written in the third person about a young boy named James).

Stimuli were created by altering a real social media persuasive appeal related to food allergies and found on the social media site "Facebook". The original was created by AllergicLiving.com, an electronic magazine from which food allergy support group members often get material to share online. The original photo of a young boy was kept in the version that contained an exemplar. In the non-exemplar version, a non-human version was included so that both versions had images. The image depicted visuals of the top eight foods that cause food allergies. The text was also altered so that there were four versions of each ad, either making injustice salient or not (using multiple dimensions of injustice) and the text either did or did not reference the exemplar. To ensure that each version had the same number of words, stimuli matrixes were created to demonstrate the wording for each part of the manipulation. See Table S1 for matrix detailing the differences in text.

2.2.5. Measures

The main measures (empathy and policy support) are latent variables, meaning that there is an umbrella concept of interest that cannot be observed or measured with a single survey item. Thus, exploratory factor analysis was used to examine the appropriateness of indexing the individual items into a single measure. Results of these factor analyses are included in the subsections below.

2.2.5.1. Empathy

Seven items from the empathetic concern portion from Davis's [32] Interpersonal Reactivity Index (IRI) were adapted to be specific for empathy for people with food allergies, rated on a scale from 0 (very strongly disagree) to 10 (very strongly agree), and accessed after participants saw the persuasive ads. These included "I could get really involved thinking about how it would feel to be a child with food allergies", "I can imagine how I would feel if I was having an allergic reaction to food", "I could very easily put myself in the place of someone having an allergic reaction to food", "I have warm, compassionate feelings for anyone who has food allergies", "I feel kind of protective toward anyone hurt by food allergies", "I feel tender, concerned feelings for anyone hurt by food allergies", and "I would feel sad and want to help anyone hurt by food allergies". Exploratory factor

analysis found one factor accounting for 69.85% of the variance, and the Cronbach's Alpha for all seven items was α = 0.981.

2.2.5.2. Policy support

Three items accessed participant's support for policies, which were rated on a 0 (Very strongly disagree) to 10 (Very strongly agree) scale. These included "New rules should be made that restrict food from classrooms", "Policies should be made that require schools to have emergency medication available for students who have food allergies at school" and "School policies should require class parties to provide non-food treats (such as pencils, rings, games, etc.) instead of food". Exploratory factor analysis found one factor with an eigenvalue greater than one accounting for 62.77% of the variance, α = 0.971.

2.2.5.3. Demographics

Demographic information asked included age, gender, education, race/ethnicity, nationality, political ideology, number of children and ages of children, whether their children have any food allergies, and if they had a family member or close friend with food allergies. The main analyses were conducted both with and without demographics included as control variables, and as the results did not change in terms of significance, the results are reported without controls.

2.2.5.4. Other variables

As this data came from a larger data set, other variables were available for post hoc analysis. These included indexed scales for liking the exemplar (two items: "I like this child" and "I can imagine myself spending time with this child"), negative affect related to anger (e.g. angry, irritated, annoyed), sadness (e.g. sad, concerned, disheartened), discrete emotions (single item scales), efficacy for the policies advocated for in the ad (e.g. "It would be easy for me to bring non-food treats to my child's classroom), identification with children with food allergies, sense of fairness (e.g. "It is unfair that some children have this health condition"), concern about children having food allergies (participants were asked to rate how concerned they were about food allergies resulting in severe illness or death for themselves, their children, children in their state, and children in America), and the cognitive aspect of psychological reactance ("Clearly the poster was pushing an agenda", "The poster tried to manipulate me", "The poster tried to pressure me to think in a certain way", "The poster tried to force its opinions on me", and "The poster tried to tell me how to make a decision for me") as well as negative emotions related to reactance through anger as a scale (e.g. participants were asked if the ad made them "angry", "irritated", etc.). Each of these were indexed after exploratory factor analysis supported one factor and α was 0.70 or higher for each. See Table 1 for correlations between variables.

Table 1. Correlations for Study 1 variables.

Variable	Mean (SD)	Justice	Exemplar	Liking character	Empathy	Policy support
Justice	-	1	-	-	-	-
Exemplar	-	0.010	1	-	-	-
Liking	7.85 (2.24)	−0.205*	−0.081	1	-	-
Empathy	7.59 (1.96)	−0.022	0.077	0.596**	1	-
Policy support	7.41 (2.17)	−0.089	0.025	0.429**	0.519**	1

**: Correlation is significant at the 0.01 level (2-tailed); *: Correlation is significant at the 0.05 level (2-tailed).

2.3. Results

2.3.1. Manipulation checks

Whether the exemplar was included or not did not impact how "well done" ($p = 0.988$), "clear" ($p = 0.616$), "visually appealing" ($p = 0.793$), "easy to read" ($p = 0.725$), or "informative" ($p = 0.942$) the audience found the posts to be. Likewise, whether injustice was made salient did not impact how "well done" ($p = 0.104$), "clear" ($p = 0.061$), "visually appealing" ($p = 0.278$), "easy to read" ($p = 0.206$), or "informative" ($p = 0.129$) the ads were rated. This is encouraging as the goal was not to manipulate these assessments.

One item for each the inclusion of the narrative and the inclusion of injustice salient were included to get a sense of whether these manipulations worked. When the exemplar was included ($m = 7.42$, $SD = 2.625$), participants were more likely to say that the ad was "written like a story," $t(281) = -2.460$, $p = 0.014$, $d = 2.875$ than when the exemplar was not included ($m = 6.58$, $SD = 3.110$). For injustice salience, participants were more likely to agree with the statement "I feel that people get what they are entitled to have" if they had seen the version of the ad that did not make injustice salient ($m = 5.20$, $SD = 3.464$) than if they had seen the version of the ad that did make injustice salient ($m = 4.11$, $SD = 3.200$), $t(281) = 2.740$, $p = 0.007$, $d = 3.369$. Thus, people who saw the injustice salient version were less likely to think the world is a just place, and those who saw the version with an exemplar were more likely to think the ad was written like a story.

2.3.2. Hypothesis testing

Hypotheses were tested using Models 4 and 7 from Hayes's PROCESS macro [33], with 10000 bootstrap iterations. While H1 predicted a direct, positive effect of justice on policy support, this was not supported as there was no significant difference in policy support, $p = 0.059$, for those who saw the version of the ad in which injustice was made salient ($m = 7.23$, $SE = 0.180$) and those who saw the version of the ad in which injustice was not made salient ($m = 7.61$, $SE = 0.185$), $\beta = -0.4323$. Thus, H1 was not supported.

While H2 predicted that injustice salience would increase empathy which in turn would then increase policy support, this was also not supported, $p = 0.1299$. While empathy did predict policy support ($p < 0.001$, $\beta = 0.5725$), injustice salience did not predict empathy in this model $p = 0.7077$.

Results for H3 were in the opposite direction as predicted. Surprisingly, people who saw the version of the ad with injustice salient had lower policy support for kids with food allergies through a

decrease in empathy, if they saw a version with an exemplar. Thus, contrary to what was expected, injustice salience backfired. The index of moderated mediation (-0.5804) was significant as the CI did not contain zero (LLCI = -1.11, ULCI = -0.05). The mediation from injustice salience to policy support through empathy was significant only for those who saw the exemplar (LLCI = -0.8035, ULCI = -0.0406). However, as injustice was coded as a "1", the negative beta indicates that it was those who saw the exemplar in which injustice was *not* made salient ($m = 8.120$, *SE* = 0.232) who felt *more* empathy than those who saw the exemplar version in which injustice was made salient ($m = 7.430$, *SE* = 0.223). Making injustice salient basically negated the benefits of the exemplar (Figure 1). The higher empathy for those who saw the version with an exemplar and injustice not made salient predicted stronger policy support $p < 0.001$, $\beta = 0.5813$, and the results held in terms of significance when a covariate asking if participants had close friends or family members with food allergies was incorporated into the model (overall model $\beta = 0.9174$, $p = 0.05$).
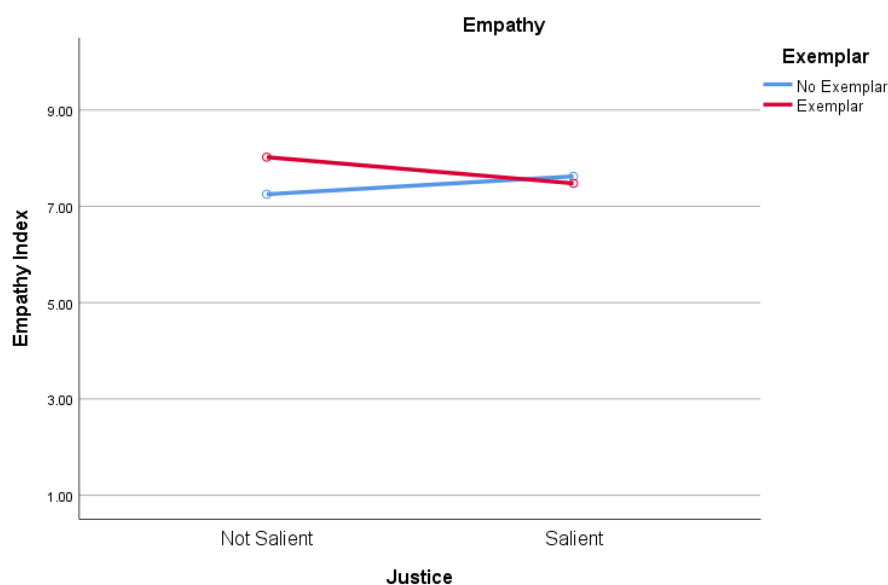
Figure 1. Empathy by justice salience by inclusion of exemplar.

2.3.3. Post hoc

Why would making injustice salient decrease empathy for participants who saw a version of the ad that included an exemplar? Perhaps the injustice salience was not well received by participants. One possibility is that it could be a reactance effect in which participants felt that the injustice salience was an attempt to manipulate their emotions and/or beliefs on the issue [34].

RQ1: Did the combination of injustice salience and an exemplar result in lower empathy through a psychological reactance effect, a tendency for people to reject a message if they feel that the message is attempting to manipulate them and therefore reduce their autonomy [34]?

To test this notion that injustice salience could result in psychological reactance, we regressed reactance on injustice salience, looking for a moderating effect of empathy. We tested the cognitive aspect of reactance [2], as well as anger as a discrete emotion using model 7 of Hayes's PROCESS macro. We also tested efficacy (similar to Witte's 1994 Extended Parallel Process Model [35], too much injustice salience may make people have lower policy support due to low efficacy which could

lead to reactance) as a potential mediator between injustice salience and reduced policy support. None of these significantly mediated the relationship between injustice salience and policy support; thus there is no supporting evidence that the reason the injustice salience message manipulation failed was due to a reactance effect.

Alternatively, or in addition to reactance, it could be that instead of the injustice making people feel a protective feeling toward the exemplar, it instead made them find the exemplar to be weak or captious, which in turn would make them feel unmotivated to help. So, it is possible that the injustice salience and a lack of empathy worked together to make participants like the character less, and therefore be less supportive of policies that would be protective of that individual.

RQ2: Did making injustice salient decrease policy support due to less liking of the exemplar by people who had less empathy for him? Again, using PROCESS model 7, we looked at whether people who saw the version of the PSA with injustice salient liked the character better depending on how much empathy they felt for him and whether that in turn resulted in an increase in policy support. The index of moderated mediation was significant (index = 0.1975, LLCI = 0.0033, ULCI = 0.3785). The interaction between justice salience and empathy on liking of the character was significant $p = 0.0033$, $\beta = 0.4611$ (as was justice alone $p = 0.0011$ and empathy alone, $p < 0.001$). According to Johnson-Newman probing the interaction, for those who saw the version with injustice salient, if empathy was less than 7.6258 on a ten-point scale, they liked the character less (β's are between −4.097 and −0.5813). Liking the character was in turn associated with more policy support, $\beta = 0.4283$, $p < 0.001$. This makes sense in hindsight since, according to Leiberg and Anders [36], empathy is a prerequisite for prosocial behavior, but only works toward that end if we attend to the needs of others instead of trying to alleviate our own distress by distancing ourselves from them (detachment). Such detachment could lead to a decrease in liking the afflicted person (as they are viewed as a problem instead of a person we feel responsible to help). Thus, if someone sees that an injustice has occurred to an individual, and they feel a sufficient amount of empathy for that person, it may result in positive feelings toward that person, and these positive feelings toward them result in wanting to support policies that are protective of that individual. However, if the viewer is made aware of an injustice, but does not feel much empathy for the afflicted person, this may cause them to detach by disliking the person, which would then result in a decrease in their desire to help.

2.4. Discussion

The results of this study were unexpected as significant differences were in the opposite direction as expected. Participants who saw the version of the persuasive appeal with an exemplar and with unfairness made salient had lower empathy and thus lower policy support for children with food allergies.

Through post hoc analysis, it seems that the injustice salience message manipulation is backfiring for persuasion, particularly when there is an exemplar shown, not because it causes reactance or general negative affect, but because the injustice salience caused participants to like the exemplar less. This is particularly the case for people who are low on victim-specific empathy. However, post hoc analyses cannot be relied upon for consistency, and it is important to examine whether these effects hold in a different group of participants with a different health condition.

3. Study Two

3.1. Introduction

The goal of this confirmatory study was to replicate methods from Study One with a different group of participants and a different health condition to see if the effects held (this study was approved under the same IRB protocol number as Study One). In addition, likability of the character was examined as a possible explanation for the unexpected results in Study One in which participants who saw an ad that made it clear that a child's condition was unfair ended up having lower policy support for children with food allergies. Due to the similarity in policy support for children with food allergies and diabetes, well as similar impact of the condition on health-related quality of life [19] we examined a persuasive appeal for policies to support children with diabetes in Study Two.

3.1.1. Diabetes

Type 1 diabetes is a chronic disease with an onset that typically occurs with little forewarning, causing families of those affected to make multiple life changes simultaneously and in a short period of time [37]. These life changes can include checking blood glucose levels, administering insulin injections, learning about and making changes in diet, and being vigilant about exercise. Type 1 diabetes is caused by an autoimmune destruction of cells in the pancreas, and although there is a genetic predisposition, there are also environmental factors related to onset that are poorly understood [38]. However, according to Moltchanova and colleagues [38], the incidence of the disease has been increasing worldwide for decades at an average annual rate of 3%.

Type 1 diabetes and food allergies have some similarities and differences which make them interesting to examine [19,39] in similar contexts. Both children with food allergies and children with diabetes have dietary restrictions which can (and often do) lead to social restrictions and have an impact on family members of those afflicted with the illness [37]. Neither of the two health issues has a cure, and both tend to be life-long afflictions, influencing daily life. Children with each health condition need to relate their issues to the school and work with faculty and staff to create a plan for their health. People with food allergies and people with diabetes both need to carry emergency medication with them, most of which involves an injection. Both health issues can be life-threatening, although for food allergies this threat is more immediate and thus is related to lower reported quality of life, including more anxiety about eating, especially away from home [19].

For both food allergies and Type 1 diabetes, the quality of life for children in school is largely dependent on the willingness of other youth, parents, and school officials to inconvenience themselves. For example, these children rely on others to take the time to make sure they do not expose them to foods they should not consume, to make sure that they do have food available that is safe to consume, and that they have access to emergency medication in case it is needed. These various forms of help from adults in school or parents are inconvenient and provide no direct benefit to those adults/parents and thus represent altruistic pro-social behavior.

Although the direct effect of injustice salience on policy support for children with food allergies was not significant in Study One ($p = 0.059$), this was tested again with the new data set to check for consistency in the results.

H_1: There will be a direct, positive effect of injustice salience on policy support regarding diabetes.

Although Study One did not find evidence that empathy mediated the relationship between injustice salience and policy support, this test was repeated in Study Two to check for consistency in the results.

H_2: Those who see the versions of the ad with injustice made salient will have lower support for policies supportive of children with Type 1 diabetes through a decrease in empathy.

Based on the significant results in Study One, we predicted that people who see the version of the ad with injustice salient will have lower policy support for kids with Type 1 diabetes through a decrease in empathy, if they see a version with an exemplar.

H_3: Those who view the ads with injustice made salient will have lower support for policies supportive of children with diabetes through a decrease in empathy, only if they see a version of the ad that includes an exemplar.

In the post hoc analysis for Study One, evidence suggested that injustice salience would predict likability of the exemplar only for participants who felt empathy for the exemplar. Previous research supports this notion that empathy is necessary for prosocial or altruistic behavior but is only successful at eliciting such behavior if a person's motivation is to help others rather than alleviate their own distress [36].

H_4: People who see the version of the PSA with injustice salient and feel more empathy for children with diabetes will report liking the exemplar more and thus have stronger policy support.

3.2. Materials and methods

Methods and measures for Study Two were adapted from Study One by replacing "food allergies" with "diabetes". See Table 2 for correlations among variables.

Table 2. Corerlations for Study 2 variables.

Variable	Mean (SD)	Justice	Exemplar	Liking character	Empathy	Policy support
Justice	-	1	-	-	-	-
Exemplar	-	−0.005	1	-	-	-
Liking	8.32 (2.00)	−0.097	NA	1	-	-
Empathy	7.43 (2.06)	0.038	0.098	0.752**	1	-
Policy support	7.21 (6.81)	−0.065	−0.049	0.183*	0.614*	1

**: Correlation is significant at the 0.01 level (2-tailed); *: Correlation is significant at the 0.05 level (2-tailed).
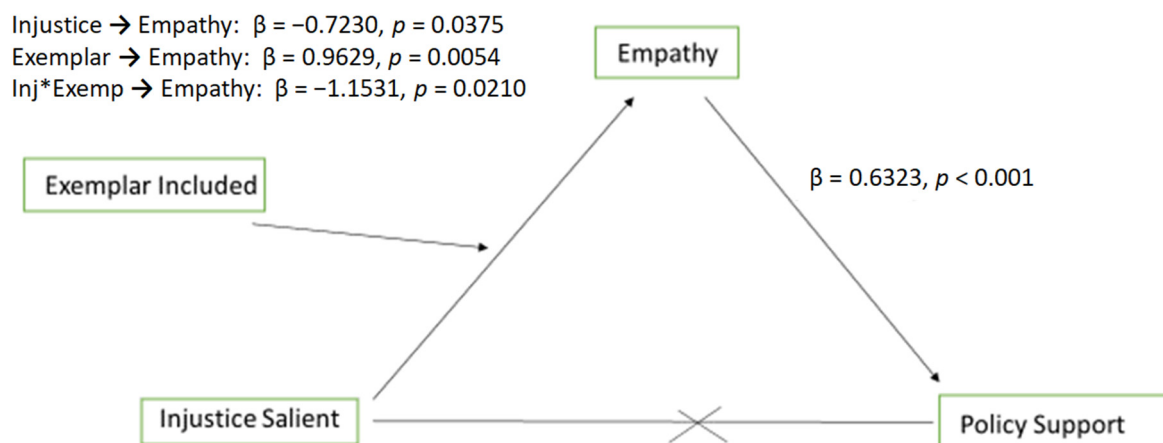
3.2.1. Participants

The population of interest, caregivers of school-aged children, was recruited through Qualtrics online panels. The sample consisted of English-speaking adults living in the U.S. with elementary school aged children. There were 159 females and 110 males (for a total of 271 participants) with ages ranging from 19 to 75. People who participated in Study 1 were not eligible to participate in Study 2, thus participants in the two studies do not overlap.

3.3. Results

As in Study One, there was no direct effect of injustice salience on policy support, $p = 0.4107$. Of note, in Study One, this effect had been approaching significance $p = 0.059$, yet in Study Two, it was not as close. This underscores the importance of repetition hypotheses to get a better idea about the big picture and potential boundary conditions.

As in Study One, there was no simple mediation from injustice salience to policy support through empathy (LLCI = −0.2086, ULCI = 0.4341). Again, we see that while empathy does predict policy support, $p < 0.001$, injustice salience alone (when not moderated by the presence or absence of an exemplar) does not predict empathy, $p = 0.5345$.

As in Study One, people who saw the version of the ad with injustice salience had lower policy support for kids with diabetes through a decrease in empathy, if they saw the version with an exemplar. The index of moderated mediation (−0.7292) was significant (LLCI = −1.3839, ULCI = −0.1174). Per Figure 2, again for those who saw the version with an exemplar, empathy was lower when injustice was made salient ($m = 7.406$, $SE = 0.258$) than when it was not ($m = 7.843$, $SE = 0.245$). Empathy in turn was associated with policy support $\beta = 0.6323$, $p < 0.001$. So again, including injustice salience, when coupled with an image of an exemplar, backfired for persuasion, decreasing policy support through a decrease in empathy for afflicted individuals.

Injustice → Empathy: $\beta = -0.7230$, $p = 0.0375$
Exemplar → Empathy: $\beta = 0.9629$, $p = 0.0054$
Inj*Exemp → Empathy: $\beta = -1.1531$, $p = 0.0210$

Empathy

Exemplar Included

$\beta = 0.6323$, $p < 0.001$

Injustice Salient

Policy Support

Figure 2. Mediation model for justice salience to policy support through empathy depending on use of exemplar.

Again, people who saw the version of the ad with injustice salient and felt less empathy for children with diabetes liked the exemplar less. This likability of the exemplar predicted more policy support. As in Study One, the index of moderated mediation (0.1948) was significant (LLCI = 0.0224, ULCI = 0.3649). Justice salience alone decreased liking the character ($\beta = -2.5061$, $p = 0.0109$), and empathy alone increased liking the character ($\beta = 0.5876$, $p < 0.001$). The interaction between justice salience and empathy again had a significant impact on liking the character $\beta = 0.3231$, $p = 0.0096$ as those who saw the justice salience version and had empathy index less than 5.7235 on a ten-point scale had significantly lower liking of the character. Liking the character again strongly predicted policy support, $\beta = 0.6030$, $p < 0.001$), see Figure 3.

Injustice → Like: β = −2.5061, *p* = 0.0109
Empathy → Like: β = 0.5876, *p* < 0.001
Inj*Emp → Like: β = 0.3231, *p* = 0.0096

```
                                              Like the Character
                                          ↗                    ↘
                                         /                      β = 0.6030, p < 0.001
       Empathy ──────────────────→      /                       ↘
                                       /                          ↘
       Injustice Salient ────────────/──────────✕──────────── Policy Support
```
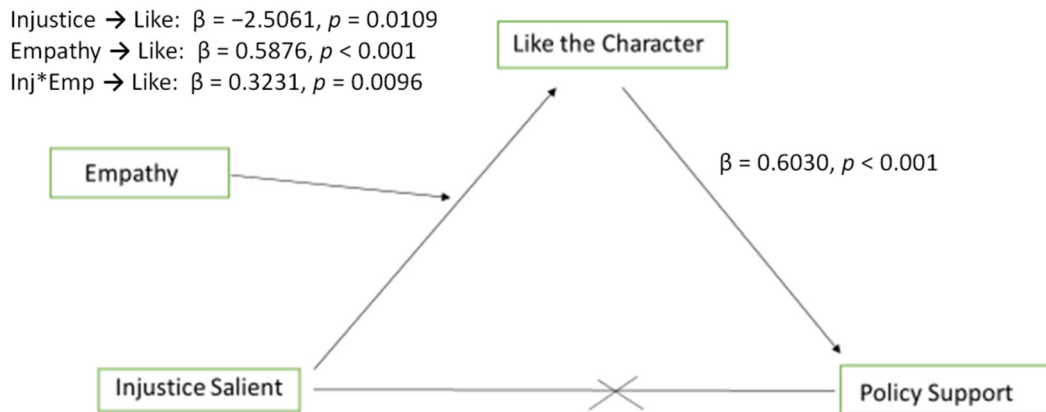
Figure 3. Median model from justice salience to policy support through character liking depending on empathy.

3.3.1.   Post hoc

RQ$_1$: To further explore the relationship between injustice salience and policy support, in post hoc analysis, we repeated H4 replacing liking the character with the same items from Study 1 (psychological reactance, negative affect related to anger and irritation, the sadness index, anger as a discrete emotion, and efficacy) to make sure these otherwise intuitive variables are consistently not supported as explanatory mechanisms. Again, none of those mediators were supported as explanatory mechanisms for injustice salience backfiring.

However, questions remained about boundary conditions of this affect. While RQ1 looked for potential explanations for why injustice salience predicts lower policy support, we also seek to better understand for whom injustice salience predicts lower policy support.

A potential explanation for the results could be that when injustice is paired with an exemplar, the description gives voice to the victim's thoughts on matters of self-interest that could paint the victim in an unflattering light. For instance, in the exemplar/injustice condition, participants are told that "James worries that the school board is not willing to pay to keep emergency medication available for him and other kids". For libertarians and many social conservatives, concern and empathy for victims does not translate into belief that social policies must fix the problem. By stating that James feels he is deserving of help from social policy interventions, the message can reduce victim support among members of these groups (perhaps because of his advocating that others adhere to a policy that inconveniences them but benefits him), and that could be driving the effect.

RQ2: Do the results of H3 remain the same, in terms of significance, when separating out participants by political ideology?

After repeating the test for H3 from Study 2, the results only held up when looking at participants who identified as conservative, somewhat conservative, or extremely conservative. In this case, the presence of an exemplar (p = 0.0168) and the interaction between the inclusion of an exemplar and injustice salience (p = 0.0181) both had a significant impact on empathy for children with food allergies. This empathy predicted policy support (p < 0.001), and the index of moderated mediation was significant (LLCI = −1.7994, ULCI = −0.2135). On the other hand, when the same model is run with participants who identify as liberal, somewhat liberal, or extremely liberal, neither

the presence of an exemplar ($p = 0.8545$) nor the interaction between the inclusion of an exemplar and injustice salience ($p = 0.8230$) impacted empathy for children with food allergies. Additionally, the index of moderated mediation did not reach significance. Similar results (in terms of lack of significance) were found for participants who identified as "neither liberal nor conservative".

Further, participants who identify as conservative liked the exemplar character more when injustice was not made salient ($m = 8.9167$) than when injustice was made salient ($m = 7.6200$), $t(53) = 2.826$, $p = 0.007$. This significant difference in liking the character less when injustice was made salient was not found for participants who identified as either liberal or neither liberal nor conservative.

4. Discussion

Based on the results of these two studies, media messages may be more effective if they include an image of an exemplar; however, including this image can interact with other message characteristics, such as injustice salience, to have counterintuitive impacts on the viewers (Table 3). For people who see a version of a persuasive health appeal with an image of an exemplar, injustice salience in the message results in a decrease in victim-specific empathy, which in turn will decrease policy support protective of these individuals. This empathy (or lack thereof) interacts with injustice salience to cause participants to like the exemplar in the ad less, and thus they are less likely to support policies to protect children with either food allergies or diabetes. These results were counterintuitive as previous research shows that people's negative reactions to injustice can motivate prosocial cooperation [29]. However, research by Kogurt [40] may provide some insight as to why injustice salience and a decrease in empathy may lead to lower policy support due to disliking the exemplar. Kogurt explains that when a victim is identified, people are more likely to want to help that victim than if the victim is not identified (e.g. statistical or anonymous victims). However, this effect of identification did not extend to a group of people. In Kogurt's work, however, the decreased desire to help was also due in part to the audience's perceptions that the victim was responsible for their own problems. In this study, that can't be an explanatory mechanism since both food allergies and diabetes are medical conditions.

Table 3. Results by hypothesis for Studies 1 and 2.

Model	Study 1	Study 2
Direct effect of injustice salience on policy support	NS	NS
Simple mediation from injustice salience to policy support through empathy	NS	NS
Injustice salience decreased policy support through a decrease in empathy, only if exemplar was included	The index of moderated mediation (-0.5804) was significant (LLCI = -1.11, ULCI = -0.05)	The index of moderated mediation (-0.7292) was significant (LLCI = -1.3839, ULCI = -0.1174)
Injustice salience and low empathy interact to decrease liking of the exemplar. Decreased liking in turn predicted lower policy support	The index of moderated mediation was significant (index = 0.1975, LLCI = 0.0033, ULCI = 0.3785)	The index of moderated mediation (0.1948) was significant (LLCI = 0.0224, ULCI = 0.3649)

Although we infer that the injustice salience and lack of empathy interact to decrease liking of the character, what this study does not tell us yet is why that would be. Perhaps the injustice salience makes people feel uncomfortable, so they don't want to identify with someone who has had this negative experience. Based on the concept that fairness can impact group identity formation [1], perhaps the general public does not want to identify with people who have been treated unfairly. Disassociating from, or "othering" them might be a way of coping with the discomfort. In fact, people can gain self-esteem through group associations [29], so people who are not impacted by food allergies or diabetes may be motivated to distance themselves from these groups instead of feeling protective motivation.

This could be working as a form of cognitive dissonance [41]. When participants see that children are put into unfair situations, they may feel some dissonance about their lack of support for these children. They could address this dissonance by supporting policies to help those kids, so that their feelings of unfairness are not contradicting their lack of effort to resolve the situation. Yet, in this case, it is more likely that any dissonance they might have felt was instead resolved by distancing themselves from the affected population. Future research is needed to more fully understand why the combination of an exemplar and injustice salience can backfire for persuasion and make people less supportive of policies that protect vulnerable children. Additionally, there are likely some individual differences like trait empathy, trait reactance, and fear of weakness/fear of being perceived as weak, which could moderate the effect of injustice on empathy for and liking of vulnerable people.

One such individual difference is political ideology. The data presented here suggest that there may be a boundary condition for the counterintuitive backfire effects that we found. These data indicate that the combination of an exemplar and making injustice salient can decrease empathy for and liking of an exemplar, which in turn can decrease support for protective policies, only for people who are conservative in their political ideology.

Previous research [42] has demonstrated that conservative backfires occur due to control perceptions. Their work provides an interesting contrast to the current study. They find that interventions that emphasize that victims can control their outcomes can lead to backlash (as evidence of control causes conservatives to blame those who do not work to change their situations). In contrast, the current set of studies examines a case where there is no control to exert. However, conservatives again have less empathy for and liking of an exemplar victim if the (low control) victim wants what some might view as a "handout" from social policies, and in this case, it is simply to help vulnerable children have a safe experience at school or in other public spaces. The effects are different but highlight just how difficult it is to rally support for vulnerable populations, when doing so challenges conservative principles related control.

4.1. Limitations and future research

This study used only one image of a child, and that image was of a white, male child. This has ecological validity because it came from a real social media post advocating for children with food allergies. However, it would be informative to determine if varying the gender, ethnicity, facial expression, and/or age of the child may interact with characteristics of the participant and have an impact on the findings. Including more images to improve stimulus sampling would also help to provide evidence that the results are generalizable across exemplar gender and a variety of other

message characteristics. Finally, in this study, the exemplar was smiling. It is possible that the results could have been different if we also examined exemplars who showed negative emotions [15,43].

Regarding the dependent variable, policy support is victim-focused in that policies would improve the lives of afflicted individuals. In this study, fairness salience did not improve this policy support. However, it is possible that fairness appeals may help with different types of support, perhaps more retributive support, like wanting to punish guilty parties as opposed to helping innocent others. Future research can examine the impact of injustice salience on a variety of other outcome variables.

Finally, there are likely important interactions between message characteristics, individual differences in viewers, cognitive and affective responses to messages, and consequent variables such as policy support, financial donations, and behavioral changes. For example, whereas in EPPM, fear appeals only work when both self and response efficacy are high, it's possible that fairness appeals may only work when people view the unfairness toward the afflicted individuals to be greater than the unfairness they may perceive is being put on them to engage in the proscribed behavior. Perhaps asking people to support policies that help keep children with food restrictions safe in the classroom can be seen as a burden to people who think such policies would have a negative impact on them.

5. Conclusions

The two studies support the notion that making unfairness salient can backfire in a persuasive health appeal and may be more pronounced for people who identify as politically conservative. Although this study examines altruism in a health context, the results are relevant to other communication subfields such as environmental and political communication. For example, similar messages may be created to increase altruistic behaviors such as policy support and direct aid to refugees or pro-environmental organizations, contributing to theoretical knowledge of how message characteristics influence the adoption of altruistic behaviors through cognitive and cognitive-affective mechanisms. Crossing the two main factors (exemplar elements and injustice salience) is particularly important because exemplars provide a face to the injustice.

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Conflict of interest

The author declares no conflict of interest in this paper.

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