Measuring global bystander intervention and exploring its antecedents for helping refugees

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Although the bystander intervention model provides a useful account of how people help others, no previous study has applied it to a global emergency. This research aims to develop a scale for measuring global bystander intervention and investigate its potential antecedents in the Syrian refugee emergency. In Study 1 ($N = 80$) and Study 2 ($N = 205$), a 12-item scale was established through a substantive-validity assessment and a confirmatory factor analysis, respectively. Study 3 ($N = 601$) explored the potential antecedents of the global bystander intervention, employing British and German samples. Results show that the global bystander intervention model worked for both samples, but there were significant between-group differences in terms of the extent to which they notice the emergency, know how to help, show political support, and donate money. Overall, the visibility of the global emergency aftermaths within the context has been deduced as a meaningful driver for between-group differences. This research provides the first empirical evidence on global bystander intervention and it offers timely suggestions to promote support for refugees or other victims of global disasters, especially among those who are distant to the disaster zone.

BACKGROUND

We see news of global emergencies almost every day, often driven by violence, natural disasters, poverty, or displacement. The countries where these emergencies take place often do not have enough resources to offer solutions to the aforementioned problems (United Nations, 2019), and thus, the assistance of other countries that can alleviate the suffering caused by such emergencies is essential. Yet, governmental helping responses are primarily shaped by political interests instead of needs (Mahendran, 2017), thus placing particular significance to individual people's helping responses. There is also a lack of response to global emergencies by people who live in countries that are geographically distant from where these emergencies took place (Pittinsky & Diamante, 2015). Therefore, it is of great importance to research individual helping responses to such disasters from people who live geographically further away, especially through two key questions: How does the helping process take place in global emergencies and what factors may be associated with such helping? This research will attempt to answer these questions in the light of the bystander intervention model. In doing so, it will focus on the Syrian refugee emergency, which is one of the most prominent global emergencies nowadays with the biggest displaced population reported to date. Syrians began to leave their homeland in 2011 due to an ascending civil conflict, and since then, the

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number of Syrians seeking shelter in another country increases every year (United Nations High Commissioner for Refugees, 2019). We specifically select the Syrian refugee emergency as the context for this research, mainly because this emergency, as well as its effects, have lasted and are likely to last for a long time, not only affecting Syrians but also other communities involved. Therefore, exploring the helping parameters of such an emergency would be beneficial for a variety of populations in addition to contributing to current psychological research.

Bystander intervention in global emergencies

To understand what leads to bystander intervention, Latane and Darley (1970) proposed a cognitive model of helping by conducting a series of laboratory experiments where they created artificial emergencies to test individuals' responses to a variety of events. Their approach produced the well-known model (Burn, 2009) and the primary organizing structure (Banyard, 2011) for interpreting bystander intervention. In this model, they identified five sequential steps that determine whether individuals intervene in a situation that requires their help: (1) noticing the event, (2) interpreting the event as an emergency, (3) taking responsibility to help, (4) knowing how to help, and (5) applying the decision to help. They further suggested that failure to take one of these steps results in bystander non-intervention.

The bystander intervention model has been applied to numerous contexts (e.g., computer-mediated communication, Markey, 2000; bullying and sexual harassment, Nickerson *et al*., 2014; child abuse and domestic violence, Hoefnagels & Zwikker, 2001), revealing the effectiveness of this model across different settings. Research so far conducted on this model has tested it exclusively in real or imagined concrete settings where individuals are direct witnesses of a single emergency (e.g., Banyard *et al*., 2019; Jenkins *et al*., 2018; Leone *et al*., 2017; Levine & Crowther, 2008). However, especially in recent times, people have been indirectly witnessing many global emergencies around the world that they do not necessarily have any physical connection with. There may be numerous global bystanders from various countries all over the world, who cannot directly witness the sufferings of victims in such emergencies but whose help to these victims might be critical.

In effect, Pittinsky and Diamente (2015) propose the concept of the global bystander (non)intervention and elaborately theorize how each step of the bystander intervention model can be applied to global emergencies, by also commenting on relevant factors for each step. To date, however, no scale exists to measure global bystander intervention. Hence, this research makes two key contributions. First, it constructs a scale to measure how individuals perceive and act upon global emergencies based on the bystander intervention model. Then, using this scale, it empirically tests the effectiveness of the global bystander intervention model in a real and ongoing emergency.

Applying the bystander intervention model into the global context

Rabow *et al*. (1990) convincingly argue that the bystander intervention model does not necessarily support the notion that bystanders are conscious of their decision-making process of helping or that these decisions are the only decisions bystanders make for intervening in an emergency. A great number of factors are also documented to affect each of the steps in this model. It is, therefore, necessary to understand what kind of factors can

contribute to these steps in the distinctive context of global emergencies, considering previously identified factors from past research.

Noticing the event (NOTICE)

Individuals first must notice an event, for which a shift of attention to an atypical situation is needed. Bystander intervention in a situation is directly or indirectly predicted by the bystanders' perception of the situation (Greitemeyer *et al*., 2006; Rabow *et al*., 1990). Individuals are less likely to pay attention to an event that requires their help if there is a focus on the self or a distraction from the environment (Burn, 2009). On the contrary, they become more likely to spot emergencies if these situations appear as vivid events (Dovidio *et al*., 2006), are clearly dangerous and not ambiguous (Fischer *et al*., 2006), or involve readily identified victims (Small & Loewenstein, 2003). These factors may, however, be stable in the context of global emergencies because such emergencies are usually characterized as being ambiguous with no specifically identified victims and particular events. In this case, it may be more beneficial to focus on other factors, such as the salience or visibility of victims. Past research shows that a lack of salience may result in less aid (Fischer *et al*., 2011). Even the type of salience may be important as both seeing an emergency and hearing about it trigger more helping responses than just hearing about it (Solomon *et al*., 1978). Furthermore, global emergencies can be more conveniently spotted via media or social media channels thanks to the increasing social network penetration rates (Statista, 2019). In that sense, the salience of victims in media or social media outlets might also contribute to the extent individuals notice an emergency. Thus, we expect that salience (or visibility) of victims will positively connect to how frequently people notice a global situation (H_1).

Interpreting the event as an emergency (EMERGENCY)

After noticing an event, individuals must interpret it as an emergency that requires others' assistance. To what degree people believe the existence of an emergency happening might influence their interpretation of the situation (Hoefnagels & Zwikker, 2001). Bystanders might not see significant events as emergencies due to the ambiguity or misunderstanding of the situation (e.g., considering the perpetrator of a sexual harassment event as the romantic partner) (Shotland & Straw, 1976; Solomon *et al*., 1978). If there is ambiguity, people may want to interpret the situation based on the responses of those who are in the vicinity of the emergency. This can, then, lead to pluralistic ignorance, which is a collective failure to see the situation as an emergency due to a misinterpretation based on other people's responses (Darley & Latane, 1968). Global emergencies can be considered highly ambiguous due to their complex nature and people become more influenced by others' reactions in such circumstances (Bickman & Rosenbaum, 1977). Individuals might not recognize an emergency as well as the need for immediate help if those around them are not certain about the emergency or not helping victims. Therefore, we suggest that pluralistic ignorance will negatively relate to how much people recognize a global situation as an emergency (H_{2a}). Besides, the perceived continuity of an emergency can be another important factor contributing to how people interpret a global situation. If there is an ongoing situation that has continued and is likely to continue for a long time, people may recognize it as an unfortunate but chronic condition, rather than an emergency requiring their urgent aid (Pittinsky & Diamante,

2015). Thus, we expect that the perceived continuity of an emergency will negatively correlate with how much people recognize a global situation as an emergency (H_{2b}).

Taking responsibility to help (RESPONSIBILITY)

After recognizing a situation as an emergency, individuals must feel responsible to aid. Various factors can affect the extent to which people feel responsible for helping, including bystander characteristics, victim characteristics, situational characteristics, and the relationship between bystanders and victims (Hoefnagels & Zwikker, 2001). Identity relations can be especially relevant in global emergencies. Individuals are more likely to take responsibility for helping when targets are their ingroup members (Levine *et al.*, 2002), when they have an increased sense of self-other overlap with targets (Cialdini *et al.*, 1997), or when they perceive targets as similar to themselves (Emswiller *et al.*, 1971). Since there is usually a physical distance between helpers and targets in global emergencies, psychological proximity between help-givers and help-receivers deriving from a shared-identity or similarity can play a key role. Consequently, we expect that how much responsible people feel to help in a global emergency will positively relate to how much they perceive victims as similar to themselves (H_3).

Knowing how to help (KNOW)

After feeling responsible to intervene in an emergency, individuals must know and decide on how to provide help. At this point, a critical decision is being made about whether help will be implemented directly or indirectly (Hoefnagels & Zwikker, 2001). Absence of intervention skills can engender a lack of knowledge on how to help in an emergency (Burn, 2009; Cramer *et al.*, 1988), and this may result in non-intervention. As there might be various ways of helping in global emergencies (e.g., donating goods or money, showing political support, involving in collective action, and volunteering), knowing how to help effectively might be a pertinent dimension to consider. It can especially be harder to distinguish effective ways of helping in global emergencies as there are usually plenty of agencies or actors involved in the emergency as well as in the humanitarian processes. People may not be sure that their help will fully reach victims or may think that it will serve to wrong purposes, such as fraud (Pittinsky & Diamante, 2015). Hence, the more individuals can identify ways of effective helping, the more easily they may know and decide on how to provide help. We suggest that especially in global emergencies, identifying effective ways of providing help will be positively correlated with how much people know how to help (H_4).

Applying the decision to help (ACT)

Once a decision about the delivery of help is taken, individuals explicitly perform the act of helping. Although critical helping actions are usually not very complex or complicated to be carried out, people might become nervous due to the stressing nature of an emergency and this might turn a simple task to a difficult action to be performed (Hoefnagels & Zwikker, 2001). Besides, there are many other factors, which may prevent people from applying a decision to intervene. Latane and Darley (1970) unveil that bystanders may not apply their decision to intervene if they have social concerns, such as a fear of embarrassment. This phenomenon, referred to audience inhibition, can even just rely on indigenous norms and take place when these norms do not promote the required
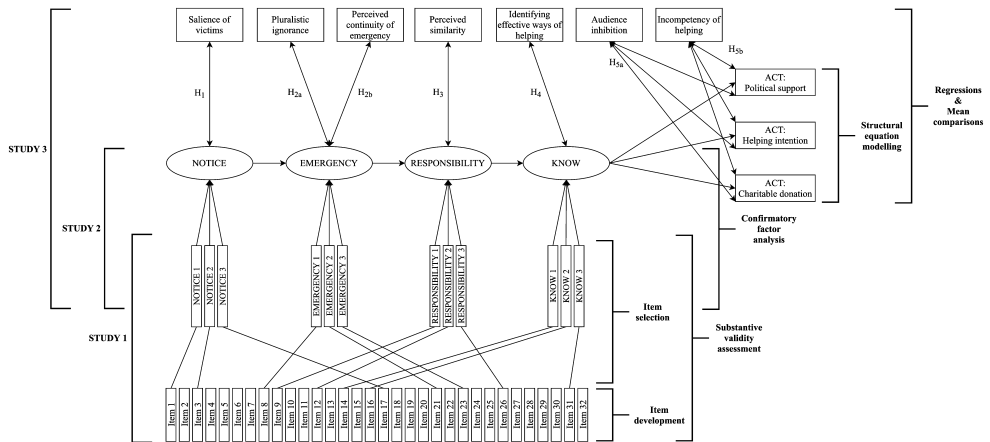
Figure 1. An overview of the studies.

helping behaviours (Rutkowski *et al.*, 1983). Especially in global emergencies that are hard to truly interpret, people might be more affected by those around them and become less likely to intervene if audience inhibition increases. Therefore, we suggest that audience inhibition and how much people help in global emergencies will be negatively correlated (H_{5a}). Furthermore, people become less prone to help if they think that there are more competent others to provide aid (Schwartz & Clausen, 1970). It is plausible for people to think that individual help is inconsequential and other actors, such as governmental or non-governmental institutions, are more capable to relieve the suffering of victims in a global emergency. Hence, we also expect that feeling incompetent to help will be negatively associated with how much people help in global emergencies (H_{5b}).

The present research

The present research has two major aims. First, we construct a Global Bystander Intervention Scale, and then, using this scale, we empirically test the stated hypotheses above in two different contexts. To this end, we created several items and ran a substantive-validity assessment to identify the most representative items for the first four factors of the global bystander intervention model (Study 1), ran a confirmatory factor analysis with the identified items and explored the relationships of the model factors with a relevant construct (Study 2), and ran a multigroup confirmatory factor analysis by testing measurement invariances and explored the potential antecedents for each model factor through a cross-country design with participants from the United Kingdom (UK) and Germany to explore contextual differences (Study 3). An overview of the studies is presented in Figure 1. We reported all measures and exclusions in this research. Analyses were conducted in R version 3.6.3 (R Core Team, 2020).[1] Materials, data, and analysis codes necessary to replicate three studies can be reached through the Open Science Framework (https://doi.org/10.17605/OSF.IO/GZ25S/).

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[1] *We used psych version 1.9.12 (Revelle, 2019), Rmisc version 1.5 (Hope, 2013), ltm version 0.7-0 (Rizopoulos, 2006), and MVN version 1.6 (Korkmaz, Goksuluk, & Zararsiz, 2014) for descriptive analyses, and lavaan version 0.4-14 (Rosseel, 2012), equaltestMI version 0.6.0 (Jiang & Mai, 2020), and lsr version 0.5 (Navarro, 2015) for CFA, SEM, and mean comparison analyses.*

STUDY 1

This study aims to run a substantive-validity assessment (SVA) with the items we created to measure global bystander intervention for helping refugees. Substantive validity is a form of content validity that helps to understand whether the content of an item truly represents the intended construct (Anderson & Gerbing, 1991). It is essential before developing a measure because it helps to eliminate the items that poorly represent their intended constructs and choosing the items that best represent their theorized constructs for a subsequent confirmatory factor analysis (CFA). In psychology, CFA is often seen as appropriate to understand whether items are representative of intended constructs; however, it only helps to determine whether certain items share enough variance to create a single factor. Even if there is a shared variance, CFA does not provide enough information to assume that items truly represent their suggested construct created by a factor. SVA, on the other hand, is an assessment of the extent to which an item represents its theorized construct. It ensures that items are clearly and correctly interpreted by both experts and lay audiences. Thus, we wanted to run SVA to identify the items that would best represent the four proposed factors of the bystander intervention model. We intentionally excluded the fifth factor (ACT) as helping action might take different forms based on individual characteristics and particular contexts, especially in the case of global emergencies. Our primary purpose was to identify three items per factor that best represent their intended constructs distinctively than other constructs.

Method

Participants

Only a small sample of 20 people is required for an SVA (Anderson & Gerbing, 1991). We recruited 80 native English speakers online via Prolific (www.prolific.co), by quadrupling the required sample size to carry out our analysis for four factors and paid them £0.85 (£5.10 per hour) for participating in the study. There was no exclusion. The mean age of the sample was 38.53 ($SD = 13.21$), and the majority of the sample was female (66.25%), British (86.25%), and without a religious affiliation (55%).

Measures and procedure

We used Anderson and Gerbing's (1991) approach to SVA. In the light of the existing literature on the bystander intervention model, the first author developed definitions for each of the four factors of bystander intervention (i.e., NOTICE, EMERGENCY, RESPONSIBILITY, and KNOW) and created 32 items (8 items per factor) based on these definitions (Table A1 in Appendix). Then, the second author reviewed all definitions and items, after which we made some adjustments to the items. Following this, two other experts in the field were separately asked to review all definitions and items, by focusing specifically on technical meaning and clarity. We incorporated their comments to create the final versions of definitions and items.

After being informed about the nature of the study, participants were asked to read the definitions of the four factors. They were then asked to assign each of the 32 items into one of the four factors or an 'unclassified' category based on the factor definitions given. The definitions were also presented at the top of the page during this task. Participants saw each item one at a time and the order of the items was randomized to control for the order effects.

Table 1. Average proportion of substantive agreement (P_{sa}) and substantive-validity indices (C_{sv}) before and after item reductions in Study 1

Factors	Test 1 (before)			Test 2 (after)		
	Number of Items	P_{sa}	C_{sv}	Number of Items	P_{sa}	C_{sv}
NOTICE	8	.705	.488	3	.846	.738
EMERGENCY	8	.561	.347	3	.771	.663
RESPONSIBILITY	8	.805	.720	3	.829	.750
KNOW	8	.700	.498	3	.783	.663
Total/Average	32	.693	.513	12	.807	.703

Results

SVA includes two indices of substantive validity: Proportion of substantive agreement (P_{sa}) and substantive-validity coefficient (C_{sv}). The former displays the proportion of an item that is assigned to its theorized construct ($P_{sa} = n_c/N$), with greater than .75 cut-off point indicating a good score. The latter displays the extent to which an item is assigned to its theorized construct more than to any other construct ($C_{sv} = (n_c-n_o)/N)^2$, with greater than .50 cut-off point indicating a good score.

At first, we calculated P_{sa} and C_{sv} indices for each item and identified the three items per factor that best represent their intended constructs (Table A2 in Appendix). After identifying three items for each factor, we calculated average P_{sa} and C_{sv} scores for each factor and overall average P_{sa} and C_{sv} scores for bystander intervention: first including all items (Test 1) and then, including the twelve identified items only (Test 2). We aimed to compare the substantive validity of all items with the identified twelve items only to test whether the identified items have a better representation of their respective constructs than all of the items.

As shown in Table 1, Test 1 results including all of the items display three of the four factors (NOTICE, RESPONSIBILITY, KNOW) with an aggregated P_{sa} greater than .75 cut-off point while the remaining factor (EMERGENCY) falling below the threshold. Similarly, they show only one of the four factors (RESPONSIBILITY) with an aggregated C_{sv} greater than .50 cut-off point while the remaining three factors (NOTICE, EMERGENCY, KNOW) falling below the threshold. Test 2 results including the twelve identified items, on the other hand, display all of the factors with an aggregated P_{sa} greater than .75 and with an aggregated C_{sv} greater than .50. Taken altogether, these results indicate that item reduction has improved the overall substantive validity and the identified twelve items represent their intended constructs better than all of the items. This is further shown by the total C_{sv} scores, which are .51 in Test 1 and .70 in Test 2. Hence, these results provided a three-item solution for each of the four factors as planned.

STUDY 2

This study aims to a) validate the previously identified items as a scale through a CFA, b) scrutinize the extent to which the steps of the global bystander intervention model are

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[2] n_c *represents the number of assignments of an item to the correct construct,* N *represents the number of participants, and* n_o *represents the higher number of assignments of an item to an incorrect construct.*

associated with each other and a related construct, and c) examine the extent to which each step in the global bystander intervention model predicts the subsequent step as in the original bystander intervention model. We chose charitable donation for the behavioural measure (ACT) for an initial analysis. Moreover, we wanted to test the criterion validity by investigating how our measure relates to a different measure that highly correlates with helping. For this, we preferred empathy to explore its relationships with the model factors because of the robust connection evidenced between empathy and helping by a plethora of research (e.g., Batson, 1991; Habashi *et al.*, 2016; Pavey *et al.*, 2012). We approached it as feelings of concern for victims rather than a trait characteristic as operationalized in past research (Batson *et al.*, 1989; Toi & Batson, 1982).

Method

Participants

As a sample of 200 people or above is suggested for structural equation modelling (SEM) analyses (Kline, 2011), we recruited 205 native English speakers online via Prolific (www.prolific.co) and paid them £0.50 (£7.50 per hour) for participating in the study. There was no exclusion. The mean age of the sample was 34.77 ($SD = 13.46$), and the majority of the sample was female (63.9%), British (68.8%), and without a religious affiliation (54.1%).

Measures and procedure

Participants responded to all measures on a 7-point Likert scale (1: strongly disagree, 7: strongly agree) unless noted otherwise. All items in each measure were randomized in itself to eliminate the order effects. Twelve items that were identified in Study 1 were used to assess the four factors of the global bystander intervention model (NOTICE, EMERGENCY, RESPONSIBILITY, KNOW). Five items adapted from James and Zagefka (2017) were used to measure participants' *empathy* felt for Syrian refugees (e.g., 'I feel great sympathy for Syrian refugees and their suffering.'). We used one question to assess *charitable donation* as the fifth factor of the global bystander intervention model (ACT). We gave participants an option to donate none, some, or all of the study participation rewards they will receive (1: 0%, 11: 100%). Regardless of their response to this question, they were debriefed and fully received their participation reward upon the completion of the study.

Results

CFA of the model and correlations among model factors

We ran a CFA with the four factors of the global bystander intervention model. The data included the previously identified twelve items for the global bystander intervention model, three for each factor. We used *NOTICE1*, *NOTICE2*, *NOTICE3* (*items 1, 3, and 17 from Study 1, respectively*) to measure *NOTICE* factor; *EMERGENCY 1*, *EMERGENCY 2*, *EMERGENCY 3* (*items 8, 21, and 24 from Study 1, respectively*) to measure *EMERGENCY* factor; *RESPONSIBILITY 1*, *RESPONSIBILITY 2*, *RESPONSIBILITY 3* (*items 9, 12, and 26 from Study 1, respectively*) to measure *RESPONSIBILITY* factor; and *KNOW1*, *KNOW2*, *KNOW3* (*items 14, 16, and 31 from Study 1, respectively*) to measure *KNOW* factor. All items were treated as continuous variables in the analysis.

Table 2. Contents of the selected items and their factor loadings to the respective model factors in Study 2 and Study 3

Items	Factor loadings		
	British (Study 2)	British (Study 3)	German (Study 3)
NOTICE 1: I am aware of the Syrian refugee issue around the world.	.70***	.54***	.43***
NOTICE 2: I know that a lot of Syrians are forced to leave their country each year to be able to continue their lives.	.82***	.73***	.83***
NOTICE 3: I am aware that there is a war in Syria causing many people to flee from their homeland.	.87***	.72***	.83***
EMERGENCY 1: It is evident to me that urgent humanitarian aid is needed for the Syrian refugee issue.	.91***	.87***	.79***
EMERGENCY 2: I think that the Syrian refugee issue is a severe emergency that other people should be involved.	.86***	.88***	.85***
EMERGENCY 3: I believe that the situation of Syrian refugees is an emergency that requires the help of other people.	.95***	.82***	.88***
RESPONSIBILITY 1: I feel personally responsible for helping Syrian refugees to safely continue their lives.	.85***	.79***	.83***
RESPONSIBILITY 2: It is my duty to do something to ease the pain and suffering of Syrian refugees.	.94***	.88***	.87***
RESPONSIBILITY 3: I believe that I have a responsibility to help Syrian refugees because my actions can comfort them.	.89***	.85***	.93***
KNOW 1: I know what to say to get others to help or support Syrian refugees.	.70***	.65***	.61***
KNOW 2: I can find organizations that provide support to Syrian refugees.	.64***	.61***	.57***
KNOW 3: I know a number of ways I can help Syrian refugees.	.88***	.87***	.88***

Note. ***$p < .001$.

Exploratory data analysis revealed deviations from normality in data distributions (Tables A3 and A4 in Appendix). Therefore, we used maximum likelihood estimation with test statistics using 1,000 bootstrapped samples and robust standard errors. All parameters were freely estimated. The model fit[3] was excellent (χ^2 (48) = 95.00, $p < .001$; *CFI* = .97; *TLI* = .96; *RMSEA* = .07; *SRMR* = .04), and as expected, all indicators showed significantly positive factor loadings, with standardized coefficients ranging from .64 to .95 (see Table 2 for all factor loadings; Figure A1 in Appendix).

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[3] *All model fits within CFA and SEM analyses in this paper were interpreted based on CFI, TLI, RMSEA, and SRMR scores, whose threshold values indicate a good fit with 0.95, 0.95, 0.07, and 0.08 cut-off points, respectively (Hu & Bentler, 1999; Steiger, 2007).*

Then, to examine whether all of the items constitute one factor rather than four, the twelve items were grouped as if predicted by one latent variable, which had a significantly worse fit to the data than the original model (χ^2 (6) = 525.14, $p < .001$). Similarly, to examine whether *NOTICE* and *EMERGENCY* items constitute one factor rather than two as these two factors are highly related based on initial CFA results ($r = .79$), their six items were grouped as if predicted by one latent variable. This model also had a significantly worse fit to the data than the original model (χ^2 (3) = 93.03, $p < .001$). Taken together, these results were consistent with the characterization of the bystander intervention model.

Finally, we calculated means and standard deviations, run correlations with computed mean scores, and checked for reliabilities (see Table 3). Internal consistency coefficients for all of the four factors were above .77. There were also significant positive correlations among four latent factors ranging from .23 (between *EMERGENCY* and *KNOW*) to .70 (between *NOTICE* and *EMERGENCY*), which indicates that those who noticed the event were more likely to recognize it as an emergency, take responsibility to help, and know how to help. However, charitable donation as the fifth factor did not have a significant relationship with *KNOW,* whereas it significantly and positively correlated with the other three factors, which signals a need to include other measures to assess the fifth factor. Lastly, *empathy* significantly and positively correlated with all factors, ranging from .19 (with *KNOW*) to .84 (with *EMERGENCY*), displaying a good criterion validity.

SEM of the model

We tested the sequential steps of the model using SEM. The model provided an excellent fit to the data (χ^2 (56) = 105.65, $p < .001$; *CFI* = .97; *TLI* = .96; *RMSEA* = .07; *SRMR* = .04). Each step significantly and positively predicted the subsequent step as theorized in the bystander intervention model, except that *KNOW* negatively predicted *charitable donation* (see Figure 2).

STUDY 3

This study aims to a) further test the measure of global bystander intervention with a cross-country design and validate it again through a multigroup CFA by testing measurement invariance in two different contexts, b) scrutinize the extent to which the steps of the global bystander intervention model are associated with each other, c) examine the extent to which each step in the global bystander intervention model predicts the subsequent step, and finally, d) explore the antecedents of each step of the global bystander intervention model in two different countries. We specifically wanted to compare samples from two different countries to explore whether the visibility of the global emergency repercussions within the context makes a difference. To this end, we chose Germany as the country for comparison to the UK because it has the highest number of Syrian refugees in Europe (United Nations High Commissioner for Refugees, 2020), which increases the visibility of second-hand effects of the global emergency for the German people. Differently than Study 2, we used three different measures for the fifth step (ACT) to explore differences in how help is provided in global emergencies.

Table 3. Alpha coefficients, means, standard deviations, confidence intervals, and correlations by the model factors in Study 2 and Study 3

Variables	α	M (SD)	95% CI [LL, UL]	2	3	4	5	6	7	8
Participant group: British (Study 2)										
1. NOTICE	.84	5.52 (1.19)	[5.36, 5.69]	.70***	.51***	.34***	.60***	NA[a]	NA	.28***
2. EMERGENCY	.93	5.37 (1.43)	[5.17, 5.56]	–	.65***	.23**	.84***	NA	NA	.35***
3. RESPONSIBILITY	.92	3.63 (1.46)	[3.42, 3.83]	–	–	.42***	.65***	NA	NA	.36***
4. KNOW	.77	3.49 (1.27)	[3.32, 3.67]	–	–	–	.19**	NA	NA	.02
5. Empathy	.97	5.41 (1.48)	[5.21, 5.62]	–	–	–	–	NA	NA	.37***
6. Political support	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7. Helping intention	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8. Charitable donation	–	4.58 (4.12)	[4.01, 5.15]	–	–	–	–	–	–	–
Participant group: British (Study 3)										
1. NOTICE	.70	5.53 (0.93)	[5.43, 5.64]	.64***	.41***	.38***	NA	.50***	.46***	.18**
2. EMERGENCY	.89	5.31 (1.18)	[5.18, 5.44]	–	.59***	.35***	NA	.69***	.66***	.19**
3. RESPONSIBILITY	.88	3.53 (1.31)	[3.39, 3.68]	–	–	.48***	NA	.60***	.72***	.14*
4. KNOW	.74	3.46 (1.13)	[3.33, 3.58]	–	–	–	NA	.37***	.44***	.08
5. Empathy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6. Political support	.89	5.14 (1.41)	[4.98, 5.30]	–	–	–	NA	–	.76***	.23***
7. Helping intention	.94	4.61 (1.46)	[4.45, 4.78]	–	–	–	NA	–	–	.21***
8. Charitable donation	–	2.89 (5.20)	[2.30, 3.49]	–	–	–	NA	–	–	–
Participant group: German (Study 3)										
1. NOTICE	.72	5.77 (0.96)	[5.66, 5.88]	.64***	.32***	.33***	NA	.49***	.40***	.13*
2. EMERGENCY	.88	5.36 (1.20)	[5.22, 5.50]	–	.52***	.30***	NA	.68***	.61***	.26***
3. RESPONSIBILITY	.91	3.39 (1.40)	[3.23, 3.55]	–	–	.48***	NA	.48***	.70***	.11†
4. KNOW	.71	3.95 (1.10)	[3.83, 4.08]	–	–	–	NA	.27***	.35***	-.01
5. Empathy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6. Political support	.71	5.42 (1.18)	[5.29, 5.56]	–	–	–	NA	–	.57***	.28***
7. Helping intention	.89	4.42 (1.46)	[4.26, 4.59]	–	–	–	NA	–	–	.16**
8. Charitable donation	–	5.41 (6.66)	[4.63, 6.20]	–	–	–	NA	–	–	–

Note. [a]Not assessed in the respective study; *** $p < .001$.; ** $p < .01$.; * $p < .05$.; †$p < .07$.

British (Study 2)

| NOTICE | .79*** | EMERGENCY | .64*** | RESPONSIBILITY | .55*** | KNOW | -.26** | Charitable donation |

British (Study 3)

NOTICE	.83***	EMERGENCY	.81***	RESPONSIBILITY	.56***	KNOW	-.01	Political support
NOTICE	.83***	EMERGENCY	.80***	RESPONSIBILITY	.56***	KNOW	.09	Helping intention
NOTICE	.83***	EMERGENCY	.76***	RESPONSIBILITY	.55***	KNOW	-.08	Charitable donation

German (Study 3)

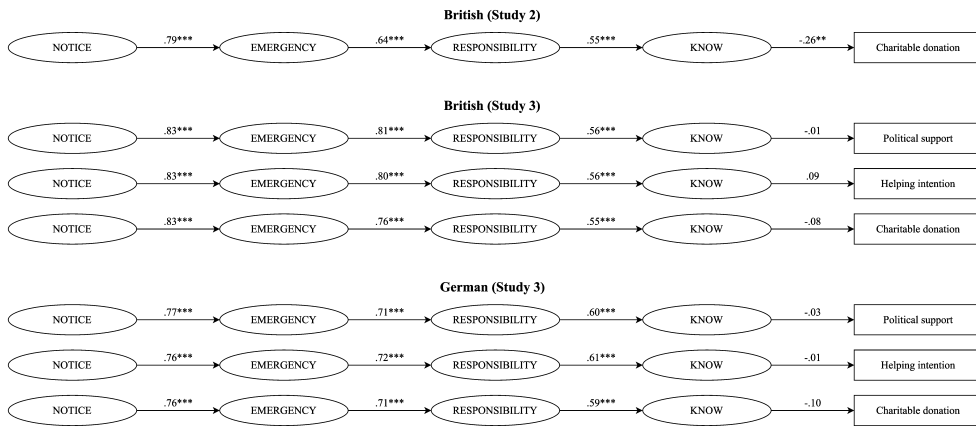| NOTICE | .77*** | EMERGENCY | .71*** | RESPONSIBILITY | .60*** | KNOW | -.03 | Political support |
| NOTICE | .76*** | EMERGENCY | .72*** | RESPONSIBILITY | .61*** | KNOW | -.01 | Helping intention |
| NOTICE | .76*** | EMERGENCY | .71*** | RESPONSIBILITY | .59*** | KNOW | -.10 | Charitable donation |

Figure 2. Standardized regression weights for the SEM with the factors of the global bystander intervention model in Study 2 and Study 3. ***$p < .001$. **$p < .01$.

Method

Participants

In this study, we wanted to run a CFA with a bigger sample than in Study 2, in line with the sample size suggestions from previous literature (Kline, 2011). We initially recruited 636 participants online via Prolific (www.prolific.co) and paid £0.50 (£6.00 per hour) for participating in the study. There were two participant groups: British citizens living in the UK and German citizens living in Germany. Eight participants ($N_{British} = 1$, $N_{German} = 7$) were excluded because their nationality or the country of residence data did not fit their respective target groups and 27 participants ($N_{British} = 12$, $N_{German} = 15$) were excluded because they failed an attention check, which remained 601 participants in total. The mean age of the British sample ($N = 306$) was 38.76 ($SD = 11.91$), and the majority of this sample was female (68.0%) and without a religious affiliation (51.6%). The mean age of the German sample ($N = 295$) was 28.61 ($SD = 8.32$), and most of this sample was male (61.4%) and without a religious affiliation (47.5%).

Measures and procedure

As in Study 2, all measures were answered on a 7-point Likert scale unless noted otherwise and all items in each measure were randomized. We used several measures to examine the potential antecedents of the global bystander intervention model. Three items measured how often the situation of victims are salient to participants (*salience of victims*; e.g., 'In my daily life, I see the situation of Syrian refugees.'; 1: never, 7: always; $\alpha_{British} = .72$, $r_{German} = .79$). Two items assessed the extent to which participants think those around them negatively react to helping victims (*pluralistic ignorance*; e.g., 'People around me are not certain that Syrian refugees need help.'; $r_{British} = .54$, $r_{German} = .60$, $p < .001$). Two items examined how participants perceive the continuity of emergency (*perceived continuity of emergency*; e.g., 'The Syrian refugee issue has gone for a long time.'; $r_{British} = .52$, $r_{German} = .38$, $p < .001$). Two items assessed the degree to which participants see victims as similar to themselves (i.e., *perceived similarity*; e.g., 'Syrian refugees are people like me.'; $r_{British} = .80$, $r_{German} = .71$, $p < .001$). Two items measured

how much participants identify effective ways of helping victims. (*identifying effective ways of helping*; e.g., 'I know the help I would give Syrian refugees would fully reach them.'; $r_{British}$ = .61, r_{German} = .60, p < .001). Two items assessed the degree to which participants think they would be negatively evaluated by those around them in the case of helping (*audience inhibition*; e.g., 'I would feel embarrassed if people around me would find out that I'm helping Syrian refugees.'; $r_{British}$ = .75, r_{German} = .56, p < .001). Two items measured how much participants consider themselves incapable of helping victims (*incompetency of helping*; e.g., 'I don't have enough power to help Syrian refugees.'; $r_{British}$ = .48, r_{German} = .41, p < .001).[4]

We used the same items from Study 2 to assess the four factors of the global bystander intervention model (NOTICE, EMERGENCY, RESPONSIBILITY, KNOW) while this time, we employed three different measures to assess its fifth factor (ACT). *Political support* was examined with four items that measured the extent to which participants support or oppose British/German government's policies that aim to support Syrian refugees (e.g., 'The British/German government should grant humanitarian protection to Syrian refugees through normal asylum procedures.'; 1: strongly oppose, 7: strongly support; $\alpha_{British}$ = .89, α_{German} = .71). *Helping intention* was examined with three items that measured the degree to which participants want to help Syrian refugees in different places (e.g., 'I would like to help Syrian refugees worldwide.'; $\alpha_{British}$ = .94, α_{German} = .89). Before finishing the survey, we provided participants with an optional task to assess *charitable donation* made for victims. We asked participants to convert some of the news we found about victims into a machine-readable format by typing out the sentences in given pictures. They were informed that this was needed for another research study and that we will donate £0.02 for each sentence they typed. In the end, we calculated the number of sentences for each participant (1: £0.02, 15: £0.30) but responses of those who did not understand the task or did not believe the reality of it were not considered ($N_{British}$ = 9, N_{German} = 15). Participants were debriefed and fully their participation reward upon the completion of the study.

Results

CFA of the model and correlations among model factors

At first, we ran a CFA with the four factors of the global bystander intervention model, separately for British and German samples to test whether the proposed four-factor model fits the empirical data from each group. The same items were used as before and exploratory data analysis revealed deviations from normality in data distributions (Tables A5 and A6 in Appendix). Therefore, we again used maximum likelihood estimation with test statistics using 1,000 bootstrapped samples and robust standard errors. Results showed acceptable model fit for the British sample (χ^2 (48) = 157.73, p < .001; *CFI* = .94; *TLI* = .92; *RMSEA* = .09; *SRMR* = .06) as well as the German sample (χ^2 (48) = 143.38, p < .001; *CFI* = .95; *TLI* = .93; *RMSEA* = .08; *SRMR* = .07), indicating that the four-factor model of global bystander intervention was supported in both groups.

Then, we ran a series of multigroup CFAs to cross-validate the four-factor model across the two samples and used measurement invariance tests to determine whether the two groups differ from each other based on structure (configural invariance), factor loadings

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[4] *Diffusion of responsibility and self-other overlap were also measured for exploratory reasons but not included in any of the analyses in this research.*

(metric invariance), intercepts (scalar invariance), and residuals (residual invariance) (Table A7 in Appendix).

Model 1 with all freely estimated parameters tested for configural invariance to examine whether the proposed structure would be equal across the two groups. The model fit was good, indicating that the factorial structure of the construct was equal across groups. The factor pattern coefficients were then constrained to be equal to test for metric invariance in Model 2. Results again showed a good fit, indicating the viability of constraining the factor loadings to be the same across groups. Model 3 with equal loadings and intercepts for testing scalar invariance also fitted the data well, indicating that the latent means can be meaningfully compared across groups. Finally, Model 4 with equal loadings, intercepts, and residuals for testing residual invariance had a good fit, indicating that the observed variables are invariant across groups, having no measurement bias.

The overall goodness-of-fit indices and the tests of differences in fit between adjacent models supported measurement invariance of the four-factor model across the two groups. As expected, all indicators showed significantly positive factor loadings, with standardized coefficients ranging from .54 to .88 for British sample and from .43 to .93 for German sample (see Table 2 for all factor loadings; Figure A2 in Appendix).

Subsequently, to examine whether all of the items constitute one factor rather than four, the twelve items were grouped as if predicted by one latent variable, which had a significantly worse fit to the data than the original model (χ^2 (12) = 1128.30, $p < .001$). Similarly, to examine whether NOTICE and EMERGENCY items constitute one factor rather than two as these two factors are highly related based on initial CFA results ($r = .83$), their six items were grouped as if predicted by one latent variable. This model also had a significantly worse fit to the data than the original model (χ^2 (6) = 121.08, $p < .001$). Taken together, these results were consistent with the characterization of the bystander intervention model.

Finally, we calculated means and standard deviations, run correlations with computed mean scores, and checked for reliabilities (see Table 3). Internal consistency coefficients for all of the four factors were above .70 for British sample and above .72 for German sample. There were also significant and positive correlations among four latent factors ranging from .35 (between EMERGENCY and KNOW) to .64 (between NOTICE and EMERGENCY) for British sample and from .30 (between EMERGENCY and KNOW) to .64 (between NOTICE and EMERGENCY) for German sample. These results indicate that both in British and German samples, those who noticed the event were more likely to recognize it as an emergency, take responsibility to help, and know how to help. Finally, both political support and helping intention significantly and positively correlated with all of the factors in both samples. However, charitable donation as the fifth factor did not have a significant relationship with KNOW in neither sample, while being positively related to the other three factors in both samples.

SEM of the model

We ran a series of multigroup SEMs for each of the ACT measures to determine whether the global bystander intervention model works similarly across the two groups. All three models provided a good fit to the data (political support: χ^2 (112) = 344.11, $p < .001$; *CFI* = .95; *TLI* = .93; *RMSEA* = .08; *SRMR* = .06; helping intention: χ^2 (112) = 319.77, $p < .001$; *CFI* = .95; *TLI* = .94; *RMSEA* = .08; *SRMR* = .06; charitable donation: χ^2 (112) = 293.30, $p < .001$; *CFI* = .95; *TLI* = .93; *RMSEA* = .08; *SRMR* = .06). In all models, each step significantly and positively predicted the subsequent step as theorized

in the bystander intervention model, except that *KNOW* did not predict *political support, helping intention, or charitable donation* (see Figure 2).

Antecedents of the model factors and differences across samples

We ran multiple linear regressions to test the hypotheses we formulated about the potential antecedents of each model factor and a multivariate analysis of variance (MANOVA) with all variables as the dependent variables and participant groups as the independent variable to see the between-group differences. MANOVA results showed that two groups scored significantly different from each other ($F(14, 562) = 19.15$, Wilk's $\Lambda = .68, p < .001$). Regression results are presented in Table 4, together with the means, standard errors, and confidence intervals for each group.

NOTICE. As expected, the salience of victims was positively related to how much both samples noticed the situation of Syrian refugees (H_1). However, compared to British people, salience of victims was more frequent for German people ($F(1, 599) = 114.90$, $\eta_p^2 = .16, p < .001$) and they noticed the situation of Syrian refugees more than British people ($F(1, 599) = 9.74, \eta_p^2 = .02, p = .002$).

EMERGENCY. Although pluralistic ignorance was stronger among British people compared to German people ($F(1, 599) = 31.81, \eta_p^2 = .05, p < .001$), it was negatively related to the recognition of emergency among both samples, as predicted (H_{2a}). While British people perceived the continuity of emergency significantly higher than German people ($F(1, 599) = 5.88, \eta_p^2 = .01, p = .016$), perceived continuity of emergency was positively associated with the recognition of emergency among both samples, contrary to our expectation (H_{2b}). Overall, there was not a significant difference between British and German people in terms of how much they recognized the situation of Syrian refugees as an emergency ($F(1, 599) = .24, \eta_p^2 = .00, p = .624$).

RESPONSIBILITY. There was no significant difference between British and German samples based on how similar they perceived Syrian refugees to themselves ($F(1, 599) = 2.84, \eta_p^2 = .00, p = .093$) and how much responsible they felt to help ($F(1, 599) = 1.66, \eta_p^2 = .00, p = .198$). In line with our expectation, perceived similarity positively related to the responsibility to help, for both samples (H_3).

KNOW. German people identified effective ways of helping ($F(1, 599) = 29.66$, $\eta_p^2 = .05, p < .001$) and knew how to help ($F(1, 599) = 37.55, \eta_p^2 = .06, p < .001$), significantly more than British people. Eventually, however, identifying effective ways helping was positively related to how much both British and German people knew how to help, as expected (H_4).

ACT. Audience inhibition levels were similar across two samples ($F(1, 599) = 1.59$, $\eta_p^2 = .00, p = .208$). In line with what is expected, it negatively related to political support

Table 4. Results of the regression analyses with means, standard deviations, and confidence intervals in Study 3

	Model factors	M (SD)	95% CI [LL, UL]	t	B (SE)	F	df	R²
Participant group: British (Study 3)								
Salience of victims	NOTICE	2.48 (0.95)	2.38, 2.60	6.65***	.35 (.05)	44.23***	1	.13
Pluralistic ignorance	EMERGENCY	4.33 (1.18)	4.29, 4.46	−5.50***	−.28 (.05)	44.24***	2	.23
Perceived continuity of emergency		5.79 (0.81)	5.70, 5.88	7.97***	.59 (.07)			
Perceived similarity	RESPONSIBILITY	4.81 (1.76)	4.61, 5.01	9.26***	.35 (.04)	85.65***	1	.22
Identifying effective ways of helping	KNOW	2.89 (1.35)	2.74, 3.04	10.72***	.44 (.04)	115.00***	1	.27
Audience inhibition	Political support (ACT)	2.11 (1.20)	1.98, 2.25	−9.91***	−.58 (.06)	50.24***	2	.25
Incompetency of helping		5.46 (1.05)	5.34, 5.58	−1.02	−.07 (.07)			
Audience inhibition	Helping intention (ACT)	–	–	−7.49***	−.47 (.06)	35.15***	2	.19
Incompetency of helping		–	–	−3.41***	−.25 (.07)			
Audience inhibition	Charitable donation (ACT)	–	–	−2.11*	−.52 (.25)	3.01	2	.02
Incompetency of helping		–	–	−1.15	−.34 (.29)			
Participant group: German (Study 3)								
Salience of victims	NOTICE	3.47 (1.28)	3.32, 3.62	4.20***	.18 (.04)	17.67***	1	.06
Pluralistic ignorance	EMERGENCY	3.75 (1.34)	3.59, 3.90	−3.48***	−.18 (.05)	11.49***	2	.07
Perceived continuity of emergency		5.62 (0.90)	5.52, 5.72	3.04**	.23 (.08)			
Perceived similarity	RESPONSIBILITY	5.04 (1.55)	4.86, 5.21	8.79***	.41 (.05)	77.27***	1	.21
Identifying effective ways of helping	KNOW	3.57 (1.37)	3.41, 3.72	12.89***	.48 (.04)	166.20***	1	.36
Audience inhibition	Political support (ACT)	1.99 (1.12)	1.86, 2.12	−6.17***	−.36 (.06)	19.08***	2	.12
Incompetency of helping		5.48 (1.06)	5.35, 5.60	−.18	−.01 (.06)			
Audience inhibition	Helping intention (ACT)	–	–	−3.86***	−.28 (.07)	12.41***	2	.08
Incompetency of helping		–	–	−3.09**	−.24 (.08)			
Audience inhibition	Charitable donation (ACT)	–	–	−1.18	−.42 (.35)	1.40	2	.01
Incompetency o helping		–	–	1.23	−.46 (.37)			

Note. ***$p < .001.$; **$p < .01.$; *$p < .05.$

and helping intention in both samples, and also negatively related to charitable donation for British people only (H_{5a}). There was not a difference between British and German people in terms of how incompetent they feel to help (F (1, 599) = .05, η_p^2 = .00, p = .827). Contrary to our prediction, this feeling of incompetency in helping did not correlate with political support or charitable donation in either sample while positively correlating with helping intention in both samples (H_{5b}). Consequently, even though both samples reported similar levels of intention to help (F (1, 599) = 2.62, η_p^2 = .00, p = .106), German people showed more political support (F (1, 599) = 6.89, η_p^2 = .01, p = .009) and donated more money (F (1, 575) = 25.89, η_p^2 = .04, p < .001) than British people.

DISCUSSION

Across three studies, we provide the first empirical evidence for the applicability of the bystander intervention model to global emergencies, in which individuals indirectly witness a disaster and are faced with its secondary consequences. To test these predictions, we first constructed a scale that displayed reliability and validity across three studies. Our main results demonstrate that the first four steps of the global bystander intervention model gradually predict their subsequent steps as in the original model (Latane & Darley, 1970). Surprisingly, however, the fifth step of the model (ACT) is not predicted by its preceding step (KNOW). Therefore, we conclude that people respond to a global emergency in similar ways that they do to other emergencies of which they are first-hand bystanders. However, knowing how to help may not always predict actual help in global emergencies, which indicates a major difference between bystander intervention and global bystander intervention.

This rather contradictory result may be due to the continuous nature of global emergencies. Most global emergencies require long-term assistance for sustainable solutions, as opposed to the other first-hand emergencies (e.g., a traffic accident, fire, flood) that can be solved relatively quickly. Thus, it is possible that people delay their helping responses to global emergencies, perhaps to discover the best possible way or time of helping. This is an important issue to explore for future research. Moreover, the possible interference of individual preferences cannot be ruled out as there are many ongoing global emergencies that require urgent humanitarian action concurrently. Since people have limited capacities to help, they may develop preferences to prioritize a specific global situation over others (or perhaps, local situations over global issues) and direct their assistance to a certain cause. In future investigations, it might be beneficial to use an extra measure in which it is possible to simultaneously assess how people respond to different global emergencies to understand whether supporting a global cause would cap their helping responses to other global issues.

Findings from the cross-country comparisons disclose that the global bystander intervention model successfully works in two different contexts; one where the after-effects of the global emergency are less observable (e.g., UK in Study 3) and one where the repercussions of it are more evident (e.g., Germany in Study 3). Yet, there are still some differences between the two contexts vis-à-vis the steps of the model. When the global emergency after-effects are more apparent in the context, victims are likely to be more frequently salient and people are more likely to notice the situation (i.e., the first step; NOTICE). Likewise, people in such contexts are more likely to identify effective ways of

helping and know how to help (i.e., the fourth step; KNOW), and also, more likely to show political support and donate money (i.e., the fifth step; ACT).

We compared two contexts based on the antecedents of the global bystander intervention model factors. Although most of the results are in the expected direction, there also appear some surprising findings. People in both samples recognize the emergency more when the perceived continuity of emergency increase (rather than decrease), which may suggest that an increased perception of continuity may hint the severity of the situation, instead of its chronicity as we suggested. Moreover, those who think their help would be seen negatively by those around them donate less money, but only in the context with less visible aftermaths of the global emergency. Therefore, perhaps witnessing the emergency aftermaths makes people less influenced by others' negative thoughts of themselves, which can be tested by future research. Finally, in both samples, the more people feel incompetent to help, the less they intend to help while their political support and charitable donation levels remain irrelevant to this feeling of incompetency. This difference rises an important question to investigate what people perceive as helping in global emergencies and why they feel incompetent to help in that way.

Theoretical implications

This research is the first to empirically test the bystander intervention model in a global setting and it extends and validates its effectiveness in a discrete setting for the first time. By doing so, our results build on the fundamental work of Latane and Darley (1970) who introduced the bystander intervention model in a laboratory setting and of Pittinsky and Diamente (2015) who later developed a theoretical framework for the application of this model into global emergencies. Additionally, our research responds to the call for testing differences between various forms of intergroup prosociality (Louis et al., 2019), by comparing three different forms of helping in the global bystander intervention model.

Our findings also support several lines of the current literature. The results showing that higher levels of political support and charitable donation in the context with more aftermath effects are in line with the research reporting that actual or hypothetical physical proximity to the disaster zone increases disaster giving (Zagefka, 2017). In effect, this research goes beyond the existing findings by signifying a potential effect of physical proximity on helping, even when this proximity is to the disaster repercussions, rather than the disaster itself. Furthermore, we show that despite differences in political support and charitable donation, helping intention levels are similar between two contexts.

In addition, the difference between two samples based on political support and charitable donation, but not based on helping intention, further supports the intention–behaviour gap (Sheeran & Webb, 2016), by demonstrating that not every helping intention turns into a helping action in global emergencies. A potential explanation for this may derive from the significant difference between two samples based on contextual differences and knowing how to help. Our findings show that those from the context with less visible aftermath know how to provide help, less than those from the context with more visible aftermath.

Although KNOW does not significantly connect to any of the ACT measures in the models we tested, the significant correlations between them may point out an interesting venue for future research to explore. This discrepancy could be attributed to a lack of prioritizing global emergencies in actual behaviour as they seem physically and psychologically further away (Trope & Liberman, 2010). Further studies, which take this possibility into account, will need to be undertaken. Overall, however, making information about

effectively helping the victims of global disasters more concrete and readily available can be a beneficial strategy to promote individual support from distant countries.

Another contribution of this research is highlighting the negative connection between incompetency of helping and helping intention, which again signals that people want to help but they do not feel capable of doing so. Even though this relationship can be somewhat instrumental in explaining the intention–behaviour gap, examining some other factors that can feed into this connection might be more useful. For instance, the political and media discourses about the victims of a global emergency may play a role in shaping individual responses (Goodman & Kirkwood, 2019), which then could affect the feelings of competency to help. Likewise, the cause of the global disaster (i.e., humanly caused versus naturally caused) can signpost victims' efforts to help themselves (Zagefka *et al.*, 2011) and this may influence how much potential helpers feel competent or incompetent to help.

Limitations and future directions

Our research targets a very specific emergency about refugees. Future research, therefore, should refocus the items of our global bystander intervention scale by changing its target sample/situation to establish its viability. For example, in all items, the 'Syrian refugee issue' could be turned into 'global water scarcity' and 'Syrian refugees' could be turned into 'people without access to clean water'. Only the second item, however, requires a major change for a different context, in which 'I know that a lot of Syrians are forced to leave their country each year to be able to continue their lives.' can be adapted to the specific situation under study (e.g., 'I know that a lot of people do not have access to clean water to be able to continue their lives.').

Similarly, we explore some antecedents that we are interested in and identify how these antecedents and their relationships to the model factors show similarities or differences across two settings. Further studies using experimental designs are required to detect any causal relationships, to specify the nature and direction of any potential effects, and to test the applicability of these potential effects across different emergencies.

Another limitation is including helping intention to assess the fifth step of the global bystander intervention model (ACT). Helping intention is not really an action; however, we consider it a proxy measure of helping. Since it is not possible to embrace every possible way of helping in global emergencies, it gives key indications about people's general attitudes (such as the positive correlation between helping intention and feeling incompetent to help in Study 3). Building on this, there is abundant room for further progress in investigating what kind of helping behaviours people perform in response to what kind of global emergencies.

Moreover, the sample size in Study 2 is relatively small for a CFA; however, strong factor loadings in our results suggest that it is enough to produce stable parameters (Wolf *et al.*, 2013). Finally, a weakness in our cross-country design is collecting data from German people with an English survey. Although Germany is one of the top countries in which citizens speak English competently (English Proficiency Index, 2020), this weakness could harm the robustness of our results. Future research within different contexts using the native language of potential helpers could provide more definitive evidence.

Conclusion

Our research has gone some ways towards enhancing our understanding of the bystander intervention model in a global context and it lays the empirical groundwork for future research into its application to other global settings. Individuals may act in the same way when they are responding to global emergencies; however, they are less likely to notice these emergencies and know how to help if emergency aftermaths are less visible. Therefore, considering the specific contexts in which potential helpers reside, together with the role of other individuals in that context, is essential. Since the majority of the global emergencies happen in poorer areas of the world or at least affect the poorest the most (World Health Organization, 2020), these findings are considered valuable in order to understand how to raise support of those in geographically and psychologically distant and mostly wealthier parts of the world, whose even small acts of help can be instrumental in rebuilding the lives of many.

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Conflict of interests

The authors declare that there is no conflict of interests.

Author contributions

Nihan Albayrak-Aydemir and Ilka Helene Gleibs involved in the conceptualization and methodology, and wrote, reviewed, and edited the manuscript. Nihan Albayrak-Aydemir involved in the data curation, formal analysis, funding acquisition, investigation, project administration, and resources, and wrote the original draft. Ilka Helene Gleibs supervised the manuscript.

Data availability statement

We report all measures and exclusions in this research. Materials, data, and analysis codes necessary to replicate three studies can be reached through the Open Science Framework (https://doi.org/10.17605/OSF.IO/GZ25S).

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Appendix :

Figure A1. Standardized regression weights for the CFA with the four factors of the global bystander intervention model in Study 2. *** $p < .001$. ** $p < .01$.

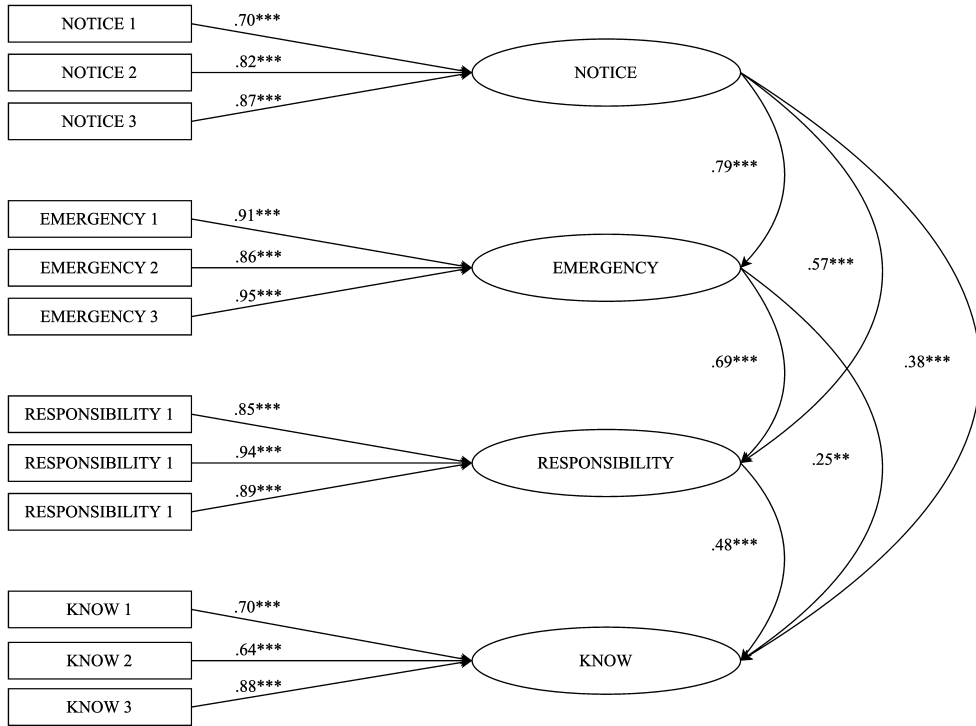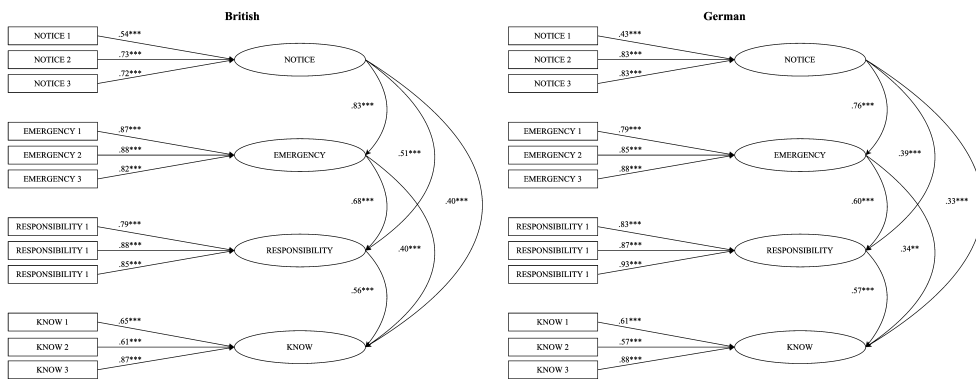**Figure A2.** Standardized regression weights for the CFA with the four factors of the global bystander intervention model in Study 3. *** $p < .001$.

Table A1. Factor definitions with the item statements created for the four latent factors of the global bystander intervention model in Study 1

Noticing the event: Shifting attention to an atypical situation and becoming aware of an unusual event

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Item 1[a]   I am aware of the Syrian refugee issue around the world.
Item 2   I know that my country has taken on a number of Syrian refugees.
Item 3[a]   I know that a lot of Syrians are forced to leave their country each year to be able to continue their lives.
Item 4   I am aware of Syrians who die every day while escaping their countries to save their lives.
Item 17[a]   I am aware that there is a war in Syria causing many people to flee from their homeland.
Item 18   I know that millions of Syrians flee from their country and seek shelter in other countries.
Item 19   I know that Syrian refugees are undergoing a horrible pain to save their lives.
Item 20   I am aware that Syrian refugees flee to safety and stability from conflict and violence.

Recognizing the event as an emergency: Acknowledging the urgency of an event and identifying it as an emergency that requires others' assistance

---

Item 5   I believe that people urgently need to intervene in the Syrian refugee issue by offering some kind of help or support.
Item 6   I think that it is crucial for Syrian refugees to receive help from other people.
Item 7   I believe that the assistance of other people is fundamental to cease the suffering of Syrian refugees.
Item 8[a]   It is evident to me that urgent humanitarian aid is needed for the Syrian refugee issue.
Item 21[a]   I think that the Syrian refugee issue is a severe emergency that other people should be involved.
Item 22   It is evident to me that someone who is a Syrian refugee needs help from others.
Item 23[a]   I believe that the situation of Syrian refugees is an emergency that requires the help of other people.
Item 24   I think that a lot of immediate funding is needed to save the lives of Syrian refugees.

Taking responsibility to help: Having care for those in need and feeling responsible to support them

---

Item 9[a]   I feel personally responsible for helping Syrian refugees to safely continue their lives.
Item 10   I feel responsible for taking action to resolve the current situation of Syrian refugees.
Item 11   It is my responsibility to intervene in the suffering of Syrian refugees I witnessed.
Item 12[a]   It is my duty to do something to ease the pain and suffering of Syrian refugees.
Item 25   Although I'm not the one causing Syrian refugees' situation, it is still my responsibility as a human to try to help them.
Item 26[a]   I believe that I have a responsibility to help Syrian refugees because my actions can comfort them.
Item 27   I feel it is my duty to help Syrian refugees because I'm better off than they are.
Item 28   I believe that I have a responsibility to do what I can to help Syrian refugees.

Knowing how to help: Having information about or capacity to learn about how to provide help to those in need

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Item 13   I have the skills to support a Syrian refugee who needs assistance.
Item 14[a]   I know what to say to get others to help or support Syrian refugees.

Continued

Table A1. (*Continued*)

Knowing how to help: Having information about or capacity to learn about how to provide help to those in need

Item 15   I can help with getting a Syrian refugee out of a situation in which they are suffering.
Item 16[a]   I can find organizations that provide support to Syrian refugees.
Item 29   I can easily reach out the charities that help Syrian refugees.
Item 30   I feel capable of helping Syrian refugees by raising my voice about their struggles.
Item 31[a]   I know a number of ways I can help Syrian refugees.
Item 32   I am capable of using my political voice in favour of Syrian refugees to support their struggles.

[a]Items that were identified to best represent their intended constructs, providing a 3-item solution for each of the four factors.

Table A2. Proportion of substantive agreement (P_{sa}) and substantive-validity indices (C_{sv}) by items and factors in Study 1

Factors	Assignment frequencies for NOTICE items							
	Item 1	Item 2	Item 3	Item 4	Item 17	Item 18	Item 19	Item 20
NOTICE	71	11	64	49	68	58	42	53
EMERGENCY	5	46	11	30	10	18	33	21
RESPONSIBILITY	0	7	0	0	0	1	1	1
KNOW	4	9	1	1	2	1	2	1
Unclassified	0	7	4	0	0	2	2	4
P_{sa}	.888	.575	.800	.613	.850	.725	.525	.663
C_{sv}	.825	.438	.663	.238	.725	.500	.113	.400

Factors	Assignment frequencies for EMERGENCY items							
	Item 5	Item 6	Item 7	Item 8	Item 21	Item 22	Item 23	Item 24
NOTICE	5	10	14	11	4	25	5	8
EMERGENCY	45	34	26	56	67	29	62	40
RESPONSIBILITY	18	22	18	5	5	14	10	2
KNOW	11	9	17	8	3	6	2	28
Unclassified	1	5	5	0	1	6	0	2
P_{sa}	.563	.425	.325	.700	.838	.363	.775	.500
C_{sv}	.338	.150	.100	.563	.775	.050	.650	.150

Factors	Assignment frequencies for RESPONSIBILITY items							
	Item 9	Item 10	Item 11	Item 12	Item 25	Item 26	Item 27	Item 28
NOTICE	2	4	2	4	6	3	4	5
EMERGENCY	1	6	8	3	6	2	3	3
RESPONSIBILITY	67	65	64	66	63	66	59	65
KNOW	2	3	5	5	3	6	9	6

Table A2. (*Continued*)

	Assignment frequencies for RESPONSIBILITY items							
Factors	Item 9	Item 10	Item 11	Item 12	Item 25	Item 26	Item 27	Item 28
Unclassified	8	2	1	2	2	3	5	1
P_{sa}	.838	.813	.800	.825	.788	.825	.738	.813
C_{sv}	.738	.738	.700	.763	.713	.750	.625	.738

	Assignment frequencies for KNOW items							
Factors	Item 13	Item 14	Item 15	Item 16	Item 29	Item 30	Item 31	Item 32
NOTICE	0	4	3	2	2	2	6	2
EMERGENCY	3	2	1	1	2	1	1	5
RESPONSIBILITY	21	13	23	10	15	24	6	17
KNOW	49	59	51	65	57	51	64	52
Unclassified	7	2	2	2	4	2	3	4
P_{sa}	.613	.738	.678	.813	.713	.678	.800	.650
C_{sv}	.350	.575	.350	.688	.525	.338	.725	.438

Table A3. Skewness, kurtosis, and normality scores for the items of the global bystander intervention model in Study 2

	Descriptives		Skewness	Kurtosis	Shapiro-Wilk
Items	M	SD	z	z	W
NOTICE 1	5.21	1.40	−1.08	1.03	0.87***
NOTICE 2	5.41	1.41	−1.28	1.57	0.84***
NOTICE 3	5.95	1.31	−1.82	3.70	0.75***
EMERGENCY 1	5.40	1.60	−1.32	1.29	0.81***
EMERGENCY 2	5.20	1.54	−1.09	0.84	0.86***
EMERGENCY 3	5.50	1.46	−1.42	2.09	0.82***
RESPONSIBILITY 1	3.28	1.60	0.26	−0.74	0.93***
RESPONSIBILITY 2	3.85	1.60	−0.23	−0.58	0.93***
RESPONSIBILITY 3	3.75	1.56	−0.11	−0.62	0.94***
KNOW1	2.94	1.46	0.61	−0.25	0.91***
KNOW2	4.48	1.56	−0.46	−0.42	0.93***
KNOW3	3.06	1.57	0.46	−0.65	0.92***

Note. Royston's $H = 490.80$, $p < .001$.
*** $p < .001$.

Table A4. Category response percentages for the items of the global bystander intervention model in Study 2

	Category response percentages						
Items	1	2	3	4	5	6	7
NOTICE 1	.03	.03	.06	.09	.30	.34	.15
NOTICE 2	.03	.03	.01	.13	.20	.39	.20
NOTICE 3	.02	.02	.01	.04	.17	.33	.41
EMERGENCY 1	.05	.04	.02	.05	.28	.29	.27
EMERGENCY 2	.05	.03	.04	.13	.24	.32	.19
EMERGENCY 3	.04	.02	.01	.09	.24	.33	.26
RESPONSIBILITY 1	.16	.20	.19	.21	.16	.05	.03
RESPONSIBILITY 2	.11	.11	.14	.28	.25	.08	.04
RESPONSIBILITY 3	.11	.13	.14	.29	.21	.07	.04
KNOW1	.16	.30	.20	.18	.11	.03	.02
KNOW2	.05	.07	.11	.22	.25	.20	.08
KNOW3	.18	.22	.25	.12	.16	.05	.02

Table A5. Skewness, kurtosis, and normality scores for the items of the global bystander intervention model in Study 3

	Descriptives		Skewness	Kurtosis	Shapiro-Wilk
Items	M	SD	z	z	W
NOTICE 1	5.29	1.27	−1.01	1.07	.88***
NOTICE 2	5.61	1.30	−1.38	2.13	.83***
NOTICE 3	6.04	1.02	−1.65	4.48	.78***
EMERGENCY 1	5.44	1.33	−1.02	1.07	.88***
EMERGENCY 2	5.12	1.36	−0.84	0.82	.90***
EMERGENCY 3	5.44	1.27	−1.11	1.51	.87***
RESPONSIBILITY 1	3.06	1.48	0.40	−0.51	.93***
RESPONSIBILITY 2	3.63	1.52	−0.06	−0.64	.94***
RESPONSIBILITY 3	3.71	1.49	−0.14	−0.59	.94***
KNOW1	3.00	1.28	0.37	−0.49	.93***
KNOW2	4.65	1.48	−0.50	−0.31	.93***
KNOW3	3.45	1.47	0.17	−0.80	.94***

Note. Royston's $H = 990.92$, $p < .001$.
*** $p < .001$.

Table A6. Category response percentages for the items of the global bystander intervention model in Study 3

	Category response percentages						
Items	1	2	3	4	5	6	7
NOTICE 1	.01	.02	.07	.09	.30	.36	.14
NOTICE 2	.02	.03	.03	.06	.23	.39	.24
NOTICE 3	.01	.01	.01	.03	.17	.40	.37
EMERGENCY 1	.02	.03	.04	.11	.26	.33	.22
EMERGENCY 2	.03	.03	.05	.16	.32	.26	.15
EMERGENCY 3	.02	.02	.04	.10	.27	.37	.19
RESPONSIBILITY 1	.17	.23	.22	.21	.11	.04	.02
RESPONSIBILITY 2	.11	.15	.15	.31	.18	.07	.03
RESPONSIBILITY 3	.10	.13	.17	.29	.22	.07	.02
KNOW1	.11	.29	.27	.20	.11	.03	.00
KNOW2	.03	.08	.10	.19	.29	.22	.09
KNOW3	.09	.21	.25	.17	.20	.07	.01

Table A7. Fit indices for CFA invariance tests in Study 3

Model	x^2 (df)	CFI	TLI	RMSEA	SRMR	Comparison	x^2 (df)	CFI	TLI	RMSEA	SRMR	Decision
Model 1: Configural invariance	301.10*** (96)	.946	.926	.084	.061	–	–	–	–	–	–	–
Model 2: Metric invariance	327.81*** (104)	.941	.926	.085	.071	Model 1	26.71*** (8)	.005	.000	.001	.010	Accept
Model 3: Scalar invariance	366.17*** (112)	.934	.922	.087	.074	Model 2	38.36*** (8)	.007	.004	.002	.003	Accept
Model 4: Residual invariance	396.28*** (124)	.929	.924	.085	.078	Model 3	30.11** (12)	.005	.002	.002	.004	Accept

Note. Decisions were made based on a criterion of a .01 change in CFI value, paired with a .015 change in RMSEA value and a .30 change in SRMR value for metric variance or a .15 change in SRMR value for scalar and residual invariance (Chen, 2007).
*** p < .001.; ** p < .01.