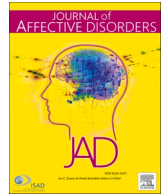


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Journal of Affective Disorders

journal homepage: [www.elsevier.com/locate/jad](http://www.elsevier.com/locate/jad)

Research paper

## The impact of a suicide prevention awareness campaign on stigma, taboo and attitudes towards professional help-seeking

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## ARTICLE INFO

## Keywords:

Suicide prevention  
SUPRANET  
multi-level intervention  
public awareness campaign  
attitudinal change  
help-seeking behaviour

## ABSTRACT

**Background:** In 2017, the European Alliance against Depression (EAAD) was introduced in The Netherlands through the creation of six Suicide Prevention Action Networks (SUPRANET Community). The intervention was launched with a national suicide prevention awareness campaign. This campaign aims to encourage the general public to talk about suicide. This study aimed to gain insight into the effectiveness of the campaign in achieving attitudinal change in the general public, as stigmas related to mental health disorders and -services are an important reason for insufficient help-seeking.

**Methods:** A repeated cross-section design, using general population surveys (N = 6,773) to measure key variables over time. The survey includes questions on socio-demographic variables, campaign visibility, brand awareness of the Dutch helpline, perceived taboo on suicide, attitudes towards depression and help-seeking.

**Results:** The public awareness campaign was predominantly visible among the younger generation. Respondents who indicated having seen the public awareness campaign showed more openness towards seeking professional help and were considerably more likely to be familiar with the Dutch helpline than those who reported not having seen the campaign. Campaign awareness also seemed to relate to a higher perceived taboo on suicide and a lower estimation of the value of professional help.

**Limitations:** Due to the nature of the intervention, we used a quasi-experimental design. Self-report can lead to desirability bias, especially when measuring attitudes and stigmas.

**Conclusions:** Our results strengthen the idea that awareness campaigns can make a contribution to informing the general public about mental health services and improving help-seeking behaviour.

### 1. Introduction

In 2018, approximately 40% of the 1829 Dutch citizens who died by suicide were enrolled in specialised mental health care treatment at the time of their death (Health and Youth Care Inspectorate, n.d.). This indicates that the majority of people did not find their way to specialised mental health care. Research has shown that the negative stigma related to mental health disorders and services are an important reason for insufficient help-seeking (Clement et al., 2015; Reynders et al., 2014; Schnyder et al., 2017). Therefore, raising awareness and fighting stigma is crucial. For this reason, addressing attitudinal factors is a key aspect of suicide prevention policies.

Public awareness campaigns are a widely used medium to improve awareness and fighting stigmas. Although research has suggested that public awareness campaigns can have a positive impact on the stigma, and openness towards, and the perceived value, of professional help, it has proven difficult to show their unambiguous effects (Kohls et al., 2017; Pirkis et al., 2017; Torok et al., 2016; Zalsman et al., 2016). Regarding the behavioural outcomes on suicide, mass media campaigns appear to be most effective when delivered as part of a multicomponent suicide prevention strategy (Torok et al., 2016). An example of such a prevention strategy is the European Alliance against Depression (EAAD). The European Commission recognised this four-level prevention programme in 2005 as a “best practice” approach to reducing suicide

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<https://doi.org/10.1016/j.jad.2020.11.024>

Received 7 July 2020; Received in revised form 29 September 2020; Accepted 7 November 2020

Available online 11 November 2020

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(Commission of the European Communities, 2005). In January 2017, this programme was introduced in the Netherlands through the creation of local Suicide Prevention Action Networks (SUPRANET Community) in six intervention regions (Gilissen et al., 2017). Although suicidality is an important outcome measure for both the EAAD and SUPRANET Community, a significant difference between them is the communication strategy. While the focus of EAAD's public awareness campaign lies on depression, SUPRANET Community is directly focused on suicide (Hegerl et al., 2009; Gilissen et al., 2017). For this reason, the SUPRANET programme is coordinated by 113 Suicide Prevention, the Dutch national helpline and suicide prevention expertise centre. Although the four-level SUPRANET Community intervention only took place in the six intervention regions, it was launched alongside a national public awareness campaign. This campaign aimed to encourage the general public to talk about suicide.

When assessing its effects on the general public, studies on the EAAD model's effectiveness have indicated that even powerful public awareness campaigns targeting the stigma of and lack of knowledge on depression lead to relatively small changes in attitude, knowledge and stigma (Coppens et al., 2013; Hegerl and Kohls, 2016; Kohls et al., 2017). However, according to Hegerl and Kohls (2016), the value of such campaigns should not be dismissed, as they can motivate people with psychiatric disorders to seek help, and signal to people with depression that there is support, acceptance and understanding among the general public.

Suicide is a global and complex public health concern. Because no "stand-alone" approach can sufficiently affect an issue as complicated as suicide, prevention strategies require coordination and cooperation between many societal parties. Measures to prevent suicide and suicide attempts are thus frequently subdivided into universal, selective and indicated strategies. *Universal* prevention strategies are designed to reach an entire population, *selective* prevention strategies focus on target groups within a population that are known to be at a greater risk of suicide and *indicated* prevention strategies are aimed at specific vulnerable individuals within a population (i.e. people who have suicidal thoughts or have attempted suicide) (World Health Organization, 2014). Public awareness campaigns fall within the scope of an universal prevention strategy, as they target the general public. Literature on the effects of suicide prevention campaigns is scarce, however. For this reason, with this study, we aim to gain insight into the effectiveness of SUPRANET Community's public awareness campaign in generating an attitudinal change in the general public. We do so by examining the SUPRANET Community awareness campaign's visibility among the general public, and studying the effect of being aware of the campaign on the brand awareness of the Dutch helpline 113 Suicide Prevention, the perceived taboo on suicide, individuals' personal and perceived stigmas towards depression and the attitude towards professional help-seeking. Based on Kohls's et al. (2017) study of the impact of the OSPI-Europe depression awareness campaign, we hypothesise that SUPRANET Community's visibility is affected by age and education level. Furthermore, being aware of the public campaign is likely to be associated with more openness to seeking professional help, and less perceived stigma surrounding depression.

## 2. Methods

### 2.1. The SUPRANET Community programme

SUPRANET Community is a two-year multi-component multi-setting suicide prevention programme. It was modelled after the EAAD and consists of four levels: (1) increasing suicide awareness through local public awareness campaigns; (2) training local gatekeepers; (3) targeting high-risk persons in the community; and (4) training and supporting professionals in primary care settings (Gilissen et al., 2017). As mentioned before, the programme was first implemented in six intervention regions in The Netherlands, called SUPRANET Communities. In

these communities, a network of local multidisciplinary teams and organisations shared ownership and responsibility for suicide prevention within a geographical region. More information on the selection of the intervention regions can be found in the study protocol by Gilissen et al. (2017) and SUPRANET's effectiveness regarding attitudinal changes in the intervention regions is shown by Van der Burgt et al. (under review).

The Dutch national suicide prevention awareness campaign was launched by 113 Suicide Prevention. The campaign *De vraag van je leven*, which can be translated as "The question of your life", was aimed at the general public, as well as general practitioners, healthcare providers and other professionals, and carried the message that asking one question can make a difference. The campaign intended to contribute to breaking the taboo on talking about suicide, recognising the signs of suicidal thoughts, giving practical tips and guidelines on how to manage suicidality and highlighting that one can turn to 113 Suicide Prevention for help. Radio commercials, online banners, advertisements and editorials were used in this campaign, as well as videos on Facebook, YouTube and the 113 Suicide Prevention website. All campaign material directly focused on suicide. For example, the following texts were used on posters: "Do you ever think about death?' Fortunately, my sister asked me the question of my life" and "Do you ever think: I'm putting an end to it all?' Fortunately, my tutor asked me the question of my life". The national public awareness campaign had five different "waves" of two or three weeks each, starting in February 2017 and ending in November 2018. The different waves focused on 113 Suicide Prevention's brand awareness, core target groups, and the relatives of people exhibiting suicidal thoughts or behaviours. For the campaign's fifth wave, a mobile application called *VraagMaar* (JustAsk) was developed to help people start a conversation with someone they are worried about. This mobile application is based on the Dutch suicide prevention gatekeeper training and includes the following aspects: recognizing the signals of suicidality, asking the question if someone is thinking about suicide, listening and showing understanding and finding help together. The mobile application can be downloaded via [www.113.nl/VraagMaar](http://www.113.nl/VraagMaar). In May 2017, the intervention regions started additional, more tailored public awareness campaigns. For example, posters were placed in various public places (e.g. pharmacies, supermarkets, churches, sports clubs and buses), advertorials were created, information meetings were organised and, in some regions, there was a collaboration with local broadcasters for items, interviews and radio and TV spots about suicide prevention. The distributed campaign materials were specifically tailored to each region; with a title containing the name of the region or altered to the most common language or dialect of that region. A selection of these campaign material can be viewed at [www.113.nl/vraagvanjeleven](http://www.113.nl/vraagvanjeleven).

### 2.2. Study design and procedure

This study employs a repeated cross-section design, using general population surveys to measure key variables over time. The surveys were conducted in the six intervention regions and across The Netherlands as a whole. The respondents were recruited via Survey Sampling International (now known as Dynata), which maintains a demographically diverse online panel of people who have registered to participate in selected surveys. When panel members log on to Dynata's website, they are randomly directed (using a survey router system) to available surveys on the basis of their demographic characteristics. The panel members also receive a modest reward (Dynata, 2020). Due to this router system, it was not possible to collect response rates. Although Dynata made several efforts to have this study's sample represent different age groups, educational levels, genders, household situations and occupational statuses, it should be considered as a convenience sample. A sample size of 1,600 respondents (1,000 respondents from non-intervention regions and 600 from the intervention regions) was planned, since this sample size would provide 80% power to detect a difference of 2% in campaign awareness if awareness in the non-intervention regions was within the range of 0–5%, a difference of

3% if awareness was in the range of 5–15% or a difference of 4% if awareness was 15% or more, using  $\alpha = 0.05$ . The data consisted of four measurements, timed to capture the intervention's effect as best as possible. The baseline measurement was conducted before SUPRANET Community's start in January 2017 (T0, N = 1,670). The second measurement took place just after the first public awareness campaign wave in May 2017 (T1, N = 1,662). The third and fourth measurements took place one year (T2, N = 1,722) and two years after SUPRANET Community's interventions were first implemented (T3, N = 1,719), respectively. Respondents in longitudinal studies can become conditioned to the study they are participating in; they may remember and repeat their previous answers, or become sensitised to the research topic (Bowling, 2004). For this reason, each measurement contains a new representative sample of adults (18+ years) from the general population; 1,000 for the control regions, and approximately 100 per intervention region. Fig. 1 shows a timeline of the four measurements and the number of respondents for each.

### 2.3. Survey instrument

The same online survey was used for every measurement. The survey partly replicated the baseline questionnaire for the general public from the OSPI-Europe study, with Dutch translations of the Depression Stigma Scale (DSS) and the Attitude towards Seeking Professional Psychological Help short form. Furthermore, information was gathered on the respondents' socio-demographic characteristics (including gender, age, region, education level and household situation), brand awareness of the Dutch helpline, campaign visibility and perceived taboo on suicide (Gillissen et al., 2017). The DSS measured the stigma associated with depression and consisted of two subscales: the Personal Stigma Scale and the Perceived Stigma Scale. Both subscales included nine items about depression. Responses to the items were measured on a five-point Likert scale ranging from "strongly disagree" to "strongly agree". Sum scores were calculated per subscale, with higher scores indicating higher levels of stigma (Boerema et al., 2016; Griffiths et al., 2004). Attitude towards help-seeking was assessed using the well-established Attitude towards Seeking Professional Psychological Help Short Form (ATSPPH-SF; Fischer and Farina, 1995). The ATSPPH-SF contained two subscales: "Openness to Seeking Treatment for Emotional Problems" and "Value and Need in Seeking Treatment". Both subscales consisted of five items assessed on a four-point Likert scale ranging from "disagree" to "agree". The scores for the Openness subscale were calculated by summing its five items, with higher scores indicating more openness towards professional help, such as, "If I believed I was having a mental breakdown, my first inclination would be to get professional attention." The scores for the Value subscale were reversed before being summed so that a higher score indicated less stigmatising attitudes towards treatment, as with, "Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me" (Coppens et al., 2013). Perceived taboo on suicide was measured with the question, "To what extent do you think there is a taboo about suicide in the Netherlands?" The respondents could score their answer on a scale ranging from 0 ("there is no taboo")

to 10 ("there is a huge taboo"). To measure 113 Suicide Prevention's brand awareness, the respondents were asked to what extent they were familiar with different mental health care organisations, including 113 Suicide Prevention. Possible answers were "I have never heard of it before", "I only know it by name", "I know in general terms what it includes" and "I know exactly what it includes". These answers were recoded into whether respondents were familiar with 113 Suicide Prevention or not. To measure the campaign's visibility, the respondents were shown an image from the public awareness campaign and asked if they had seen or heard about it or not.

### 2.4. Statistical analysis

All analyses were conducted using IBM SPSS Statistics version 25.0 and the Stats package in R version 3.5.1. Differences in brand awareness between campaign awareness groups were graphically displayed for each follow-up measurement (T1-T3) and tested using a chi-square test. Next, the effect of campaign awareness on brand awareness was estimated using multivariable logistic regression, testing the effect of campaign awareness while controlling for age, education, gender, measurement and whether or not the respondent lived in an intervention region (being an interesting covariate in itself). Similarly, multivariable linear regression models were used to test the effect of campaign awareness on five continuous outcomes: perceived taboo, the two subscales of the DSS and the two of the ATSPPH-SF. To measure the internal consistency of the ATSPPH-SF and DSS subscales, the Cronbach's alpha value of each subscale was calculated.

## 3. Results

Between January 2017 and January 2019, four surveys had been carried out. Table 1 displays the respondents' characteristics to those four different measurements. These characteristics were comparable regarding gender, education level and household situation. Only age ( $\chi^2(15) = 83.18, p < 0.05$ ) and occupational status ( $\chi^2(21) = 68.40, p < 0.05$ ) significantly differed between the four measurements. In this sample, the Cronbach's alpha value of the two ATSPPH-SF subscales Openness to Seeking Treatment for Emotional Problems and Value and Need in Seeking Treatment were .78 and .67, respectively. The alpha values of the DSS subscales were .84 for personal stigma and .85 for perceived stigma.

The percentage of respondents who reported having seen SUPRANET Community's public awareness campaign at T1, T2 and T3 were 15.9%, 11.6% and 12.2% respectively. Table 2 shows the percentage of respondents who indicated having seen the public campaign per age group, educational level and gender. Multiple logistic regression analysis indicated that gender and education level had no influence on awareness of the public campaign (Table 3). However, it did reveal a significant difference between age groups: averaged over the three time points, the public awareness campaign was most visible (23.4%) among the youngest age group (< 25 years) and less among the older age groups. Furthermore, the percentage of respondents who reported

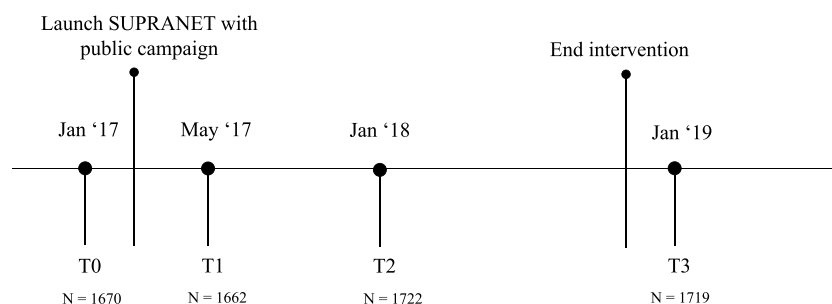


Fig. 1. Timeline of the four measurements.

**Table 1**  
Respondents' characteristics (in %).

	T0 (N=1,670)	T1 (N=1,662)	T2 (N=1,722)	T3 (N=1,719)
Gender				
Male	49.6	48.4	46.4	48.7
Female	50.4	51.6	53.6	51.3
Age				
< 25 years	12.2	12.5	14.5	12.7
25-34 years	11.4	10.8	12.1	12.3
35-44 years	13.2	11.7	14.5	12.4
45-54 years	23.5	24.5	18.7	22.3
55-64 years	26.0	23.3	21.4	18.4
65 years and older	13.6	17.3	18.8	21.8
Educational level				
Low	31.3	31.2	30.3	30.4
Medium	41.0	40.4	40.7	41.6
High	27.7	28.4	29.0	28.0
Household situation				
Married/cohabitating, with children	41.8	38.7	39.5	40.5
Married/cohabitating, without children	16.4	17.2	17.8	16.3
Single, with children	7.8	7.3	7.4	7.6
Single, without children	21.7	25.3	20.9	23.3
Community housing, student house	2.0	2.5	2.3	2.0
Living at parents or family	8.6	7.5	10.0	8.8
Other	1.7	1.6	2.0	1.5
Occupational status				
Entrepreneur	6.1	7.5	7.0	5.9
Employed	37.1	35.4	37.0	39.6
Working for the government	3.7	3.2	3.1	3.6
Incapacitated/unemployed/looking for a job/social benefits for health reasons	13.7	15.3	12.1	12.0
Unemployed/looking for a job/social benefits due to other reasons	5.3	5.5	3.3	2.9
Retired	15.4	16.5	18.2	20.7
Student	8.1	8.1	9.2	7.5
Housekeeping /other	10.7	8.5	10.0	7.9

**Table 2**  
Campaign awareness (in %) per age group, educational level, gender and intervention region.

	T1	T2	T3	T1-T3 (average)
Age group				
< 25 years	26.6%	20.8%	23.4%	23.4%
25-34 years	21.8%	18.2%	19.3%	19.7%
35-44 years	16.4%	10.0%	11.2%	12.3%
45-54 years	12.0%	6.5%	9.7%	9.6%
55-64 years	12.7%	8.2%	8.8%	10.0%
65 years and older	14.3%	10.2%	7.7%	10.4%
Education level				
Low	16.2%	9.2%	9.7%	11.7%
Middle	13.4%	11.4%	13.1%	12.6%
High	19.3%	14.2%	12.7%	15.4%
Gender				
Male	16.0%	11.3%	12.7%	13.4%
Female	15.9%	11.6%	11.8%	13.1%
Intervention region				
No	15.2%	11.0%	11.0%	12.4%
Yes	17.1%	12.5%	14.2%	14.5%
Total	15.9%	11.6%	12.2%	13.2%

having seen the public awareness campaign was highest in the intervention regions. A more in-depth analysis shows the predicted marginal probabilities of campaign awareness for different age groups by type of region (Table 4).

**Table 3**  
Summary of Logistic Regression Analysis for Variables Predicting Campaign Awareness.

	ln(OR)	SE	OR
Constant	-0.86***	0.15	0.42
Measurement (ref: T1)			
T2	-0.44***	0.10	0.64
T3	-0.37***	0.10	0.69
Age group (ref: < 25 years)			
25-34 years	-0.26	0.14	0.77
35-44 years	-0.83***	0.15	0.44
45-54 years	-1.17***	0.14	0.31
55-64 years	-1.10***	0.14	0.33
65 years and older	-1.05***	0.15	0.35
Education level (ref: low)			
Middle	-0.13	0.11	0.88
High	-0.03	0.12	0.97
Gender (ref: male)			
Female	-0.06	0.09	0.95
Intervention region (ref: no)			
Yes	0.20*	0.09	1.22

Note: \* p<0.050; \*\* p<0.010; \*\*\* p<0.001.

**Table 4**  
Predicted marginal probabilities (95%-CIs) of campaign awareness for different age groups and the total group by type of region and average marginal effects (95%-CIs) of intervention.

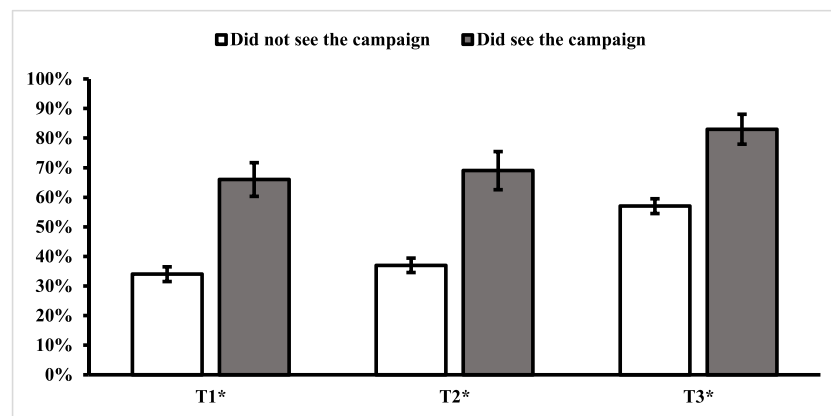
	Non-intervention region	Intervention region	Average marginal effect
Age group			
< 25 years	23.0% (19.6%, 26.4%)	26.7% (22.5%, 31.0%)	3.7% (0.4%, 7.0%)
25-34 years	18.8% (15.5%, 22.1%)	22.0% (18.0%, 26.1%)	3.2% (0.4%, 6.1%)
34-44 years	11.6% (9.1%, 14.1%)	13.8% (10.7%, 16.9%)	2.2% (0.2%, 4.2%)
45-54 years	8.5% (6.9%, 10.2%)	10.2% (8.1%, 12.4%)	1.7% (0.2%, 3.2%)
55-64 years	9.1% (7.3%, 10.8%)	10.8% (8.6%, 13.0%)	1.8% (0.2%, 3.4%)
> 64 years	9.5% (7.6%, 11.5%)	11.4% (9.1%, 13.7%)	1.9% (0.2%, 3.5%)
Total	12.3% (11.2%, 13.5%)	14.6% (13.0%, 16.2%)	2.3% (0.3%, 4.3%)

To investigate the public awareness campaign's impact on attitudinal changes in the general public, multiple regression analyses were conducted. Table 5 presents an overview of the regression models predicting respondents' scores on the six key variables; brand awareness of 113 Suicide Prevention, perceived taboo on suicide, the two DSS subscales (perceived and personal stigma towards depression) and the two ATSPPH-SF subscales (Openness to Seek Treatment for Emotional Problems and Value and Need in Seeking Treatment). The results show that respondents who indicated having seen the public awareness campaign scored more than half a point higher on the Openness subscale (15-point scale) ( $\beta = 0.57, p < 0.001$ ) than those who reported not having seen the campaign. Being aware of the public awareness campaign was also associated with brand awareness of the Dutch helpline 113 Suicide Prevention. The respondents who reported having seen the public awareness campaign were considerably more likely to be familiar with the helpline (OR = 3.36, 95% CI: 2.77 - 4.08) than those who reported not having seen the campaign (see also Fig. 2). Contrary to our expectations, the campaign's visibility was negatively related to the Value and Need in Seeking Treatment subscale's scores ( $\beta = -0.33, p < 0.01$ ) and positively to the perceived taboo on suicide, namely 0.36 points higher on a 10-point scale ( $\beta = 0.36, p < 0.001$ ). The results indicated no significant effect of campaign visibility on the respondent's perceived or personal stigma towards depression. The average scores on the Personal and Perceived Stigma scale were respectively 12 (SD = 6.36) and 17 (SD

**Table 5**  
Overview of regression models predicting the scores on six key variables.

	Brand awareness		OR	Perceived taboo		Perceived stigma subscale		Personal stigma subscale		Openness subscale		Value subscale	
	ln(OR)	SE		B	SE	B	SE	B	SE	B	SE	B	SE
Constant	-1.36***	0.12	0.26	5.49***	0.11	17.52***	0.31	15.80***	0.30	7.88***	0.15	7.59***	0.14
Measurement (ref: T0)													
T1	1.16***	0.09	3.18	-0.01	0.07	0.74***	0.22	0.00	0.22	0.03	0.11	0.04	0.10
T2	1.26***	0.09	3.52	-0.20**	0.07	0.16	0.22	0.16	0.22	0.14	0.11	-0.06	0.10
T3	2.12***	0.09	8.36	0.06	0.07	0.62**	0.22	-0.05	0.21	0.16	0.11	-0.14	0.10
Age group (ref: < 25 years)													
25-34 years	-0.21	0.11	0.81	0.50***	0.11	1.09***	0.31	0.44	0.30	0.53***	0.15	0.30*	0.14
35-44 years	-0.71***	0.11	0.49	0.68***	0.10	1.18***	0.30	0.52	0.30	0.52***	0.15	0.56***	0.13
45-54 years	-0.78***	0.10	0.46	0.86***	0.09	-0.04	0.27	-0.90***	0.27	0.74***	0.13	0.81***	0.12
55-64 years	-0.76***	0.10	0.47	1.02***	0.09	-0.93***	0.28	-1.42***	0.27	0.99***	0.13	0.94***	0.12
> 64 years	-0.88***	0.10	0.42	0.80***	0.10	-2.43***	0.29	-1.03***	0.29	1.09***	0.14	0.79***	0.13
Education level (ref: low)													
Middle	0.15*	0.07	1.16	0.21***	0.06	0.07	0.19	-0.95***	0.18	0.16	0.09	0.32***	0.08
High	0.37***	0.08	1.45	0.36***	0.07	0.20	0.21	-2.13***	0.21	0.49***	0.10	0.62***	0.09
Gender (ref: male)													
Female	-0.13*	0.06	0.88	0.27***	0.05	-0.94***	0.16	-2.88***	0.15	0.42***	0.08	0.77***	0.07
Campaign awareness (ref: no)													
Yes	1.21***	0.10	3.36	0.36***	0.09	-0.01	0.27	0.38	0.26	0.57***	0.13	-0.33**	0.12
Intervention region (ref: no)													
Yes	0.21***	0.06	1.24	0.07	0.06	-0.73***	0.16	-1.01***	0.16	0.15	0.08	0.39***	0.07

Note: \*  $p < 0.050$ ; \*\*  $p < 0.010$ ; \*\*\*  $p < 0.001$ .



**Fig. 2.** Brand awareness of 113 Suicide Prevention by campaign visibility.

Note: T1:  $N = 1,662$ ,  $\chi^2(1)=96.8$ ,  $p < 0.001$ , T2:  $N = 1,722$ ,  $\chi^2(1)=71.5$ ,  $p < 0.001$ , T3:  $N=1,719$ ,  $\chi^2(1)=52.4$ ,  $p < 0.001$ .

The brand awareness of 113 Suicide Prevention at T0, T1, T2 and T3 was 14.8%, 39.4%, 41.1% and 60.4% respectively.

= 6.40) on a scale ranging from 0 to 36. This seems to be consistent with previous research (Boerema et al., 2016).

#### 4. Discussion

This paper examined the effectiveness of SUPRANET Community's suicide prevention public awareness campaign in achieving attitudinal change in the Dutch general public. Based on a study of the OSPI-Europe depression awareness campaign's impact, we hypothesised that age and education level would affect the public awareness campaign's visibility, and that being aware of the public campaign would likely be associated with more openness towards seeking professional help and less perceived stigma of depression (Kohls et al., 2017). Upon comparing our study's four measurements, the respondents' age and occupational status differed significantly. We could not pinpoint an explanation for why these differences occurred, and instead attribute them to chance.

Our findings suggest that SUPRANET Community's national public awareness campaign was moderately successful in establishing visibility among the general public, and it was most visible among the youngest respondents (< 25 years).

The results indicated gender and education level had no influence on awareness of the public campaign. These findings partially contrast with

our hypothesis and Kohls et al.'s (2017) findings about the OSPI-Europe awareness campaign. Although Kohls et al. (2017) also found no gender differences among those aware of the campaign, they did find differences based on education level and age, with higher campaign visibility among older and less-educated respondents. This discrepancy can most likely be explained by the difference in dissemination channels: whereas the OSPI-Europe campaign relied mostly on classic channels, such as flyers and posters, the SUPRANET Community campaign also used radio, TV and online advertisements on social media and news sites to gain publicity.

The brand awareness of the Dutch helpline 113 Suicide Prevention, rose considerably over time. Furthermore, respondents who had indicated having seen the public awareness campaign showed more openness towards seeking professional help and were more likely to be familiar with the Dutch helpline than those who had not reported seeing the campaign. The importance of this result should not be underestimated, as it suggests that the campaign was successful in informing the general public about the existence of the Dutch suicide prevention helpline and its expertise centre, and had a positive effect on help-seeking behaviour. But reverse causality cannot be excluded. It could also be possible that respondents who are more open to professional help may be more likely to notice, and remember seeing, a public awareness

campaign concerning this theme. Despite our expectations, awareness of the campaign also seemed to relate to a higher perceived taboo on suicide, and a lower estimation of the value of professional help. The perceived taboo on suicide was measured by the question, “To what extent do you think there is a taboo on suicide in the Netherlands?” In the questionnaire, the respondents did not receive a definition of *taboo* in this context. Therefore, the higher perceived taboo among those aware of the campaign is probably due to the fact that we measured the perceived taboo on suicide, and not one’s own stigma towards suicide, thus measuring the awareness of the taboo on suicide, which may arise if a campaign on suicide prevention is seen. We could not derive a reasonable explanation to why awareness of the campaign would relate to a lower estimation of the value of professional help.

Contrasting with our hypothesis, campaign visibility had no effect on the respondents’ perceived stigma towards depression. However, this is probably not surprising given that the campaign focused on suicide instead of depression. It might be possible that the public awareness campaign did have an effect on the perceived stigma towards suicide, however.

As it is challenging to measure the effects of a public awareness campaign, this study with its repeated cross-section design, including large sample sizes and the use of internationally validated instruments, is unique. However, our study also has some limitations that should be taken into consideration when interpreting its findings. First, due to the nature of the intervention, we used a quasi-experimental design, meaning that the estimations are not as robust as in a randomised controlled trial. Second, self-reports can lead to desirability bias, especially when measuring attitudes and stigmas. Still, using an anonymous online survey likely minimised this bias, as self-administration of questionnaires can increase willingness to disclose sensitive information compared to face-to-face or telephone interviews (Bowling, 2005).

The data have a hierarchical structure, as the respondents were clustered within regions. For this reason, we initially tried fitting multilevel models to take this clustering into account. However, multi-level analyses in R showed a very small intraclass correlation, probably due to the homogeneity of The Netherlands as a small country. Likewise, adding the regions as a second level did not significantly improve the models.

As the intervention regions had put a lot of effort into additional and tailored public awareness campaigns, it is encouraging that the percentage of respondents who reported having seen the campaign was highest in the intervention regions. This strengthens the idea of an exposure-response effect, meaning that the extra efforts in the intervention regions indeed led to the public awareness campaign’s greater reach.

In conclusion, our study shows that the SUPRANET Community awareness campaign was predominantly visible among the younger generation. The respondents who indicated having seen the public awareness campaign showed more openness towards seeking professional help and were considerably more likely to be familiar with the Dutch helpline 113 Suicide Prevention than those who reported not having seen the campaign. Contrary to our hypothesis, campaign awareness also seemed to relate to a higher perceived taboo on suicide and a lower estimation of the value of professional help. As mentioned before, despite the small changes in attitudes in the general public, the value of public awareness campaigns are a function of both their impact and the number of people who are reached. Small effects in many people may translate into substantial yields of a campaign. Moreover, awareness campaigns, are mostly employed as one component in a broader prevention strategy. The importance of a message of understanding and support, as conveyed by such a public awareness campaign, should not be underestimated. The results in this study strengthen the idea that a public awareness campaign is of added value, as it can contribute to informing the general public about the existence of mental health services and improve help-seeking behaviour. Since public awareness campaigns are heavily impacted by demographic, cultural and social

characteristics, findings are often not directly generalisable. Still, our study adds to a growing body of research on public health interventions and, therefore, transcends the suicidology field.

## Declaration of Competing Interest

None.

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