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Evaluating the persuasiveness of an HIV mass communication campaign using gain-framed messages and aimed at creating a superordinate identity

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Abstract

This research assesses the coverage and impact of 'United against AIDS', the 2012-13 Italian

National HIV/AIDS prevention campaign to promote safer sex behavior and voluntary HIV

counseling and testing. The campaign used gain-framed messages and aimed at creating a

superordinate identity. We conducted two studies. The first study employed a quasi-experimental

design involving three groups of participants: general population ($n = 858$), MSM ($n = 109$), and

migrants ($n = 211$). In the second study, we carried out a time series design to analyze the archival

data of the Italian National AIDS Help-Line. Exposure to the campaign was reported by 78.3%,

67.5%, and 57.8% of the general population, MSM, and migrant respondents, respectively. The

probability of having unprotected sexual intercourse with multiple partners decreased significantly

in the subsample of the general populations that was exposed to the campaign (compared to the

non-exposed participants) but the same effect was not found among MSM and migrant participants.

The probability of having unprotected sexual intercourse with someone of unknown HIV status

decreased after the campaign in the exposed MSM subsample (compared to the non-exposed

participants) but the same effect was not found among the general population and migrant

participants. In addition, the probability of undertaking HIV testing increased significantly in the

exposed participants belonging to the general population but not among MSM and migrant

participants. Time series analysis revealed that the number of calls at the Italian National AIDS

Help-Line significantly increased during the campaign. This research provides evidence that the

effect of the campaign was complex and varied across participants.

Keywords: HIV, AIDS, mass communication campaigns, sexual behavior, HIV testing, voluntary

HIV counseling

Evaluating the Persuasiveness of an HIV Mass Communication Campaign Using Gain-Framed

Messages and Aimed at Creating a Superordinate Identity

HIV/AIDS continues to be a major health problem in Europe. In 2012, 29,381 new HIV

infections were diagnosed in the European Union and European Economic Area (with a rate of 5.8

per 100,000 population) and 1,017 individuals diagnosed with AIDS were reported to have died of

AIDS. In Italy, in the years 2006 to 2012, 23,132 newly diagnosed HIV infections and 3,941 deaths

among people living with HIV/AIDS had been reported (ECDC/WHO, 2013).

Mass communication campaigns have been widely utilized to disseminate HIV prevention

messages worldwide and have become an essential part of HIV prevention efforts (Palmgreen,

Noar, & Zimmerman, 2008). A recent meta-analysis showed that mass media interventions for HIV

may be useful in improving condom use (LaCroix, Snyder, Huedo-Medina, & Johnson, 2014).

Another meta-analysis revealed that mass media campaigns have shown an immediate and

significant overall effect on voluntary counseling and testing (Vidanapathirana, Abramson, Forbes,

& Fairley, 2005). Unfortunately, these meta-analytic reviews did not distinguish effects for different

specific message content; indeed, to date, no meta-analysis appears to have done so. Although these

meta-analyses were able to estimate mean effect sizes of the impact of mass media interventions for

HIV, further research is required to identify the characteristics of messages in mass media

interventions for HIV to promote safer sex behavior. The present study contributes to and builds

upon existing research on mass media interventions for HIV (Palmgreen et al., 2008) in that we

examined the effect of a campaign whose message is gain-framed and creates a superordinate

identity. To our knowledge, this is the first study published that evaluated a campaign with these

characteristics.

Gain-Framed Messages and the Creation of a Superordinate Identity

According to prospect theory (Tversky & Kahneman, 1981), people respond differentially to

messages depending on how these messages are framed despite the information presented in the

messages may be factually equivalent. A loss-framed message emphasizes the disadvantages of

failing to comply with the recommendation while gain-framed message highlights the advantages of compliance. Gain-framed appeals can be as persuasive as loss-framed appeals (O'Keefe & Jensen, 2009). In addition, fear appeals can be ineffective for HIV health promotion because members of the target audience may attempt to deflect the messages away from themselves and describe other groups as the audience ("othering processes"; Slavin, Batrouney, & Murphy, 2007). Othering processes can also be extremely stigmatizing and disempowering and mass media campaign efforts turned out to be far from emancipatory and inclusive (Khan, 2014). To avoid these othering processes, it may be helpful to use messages aimed at creating a superordinate identity (Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; Sherif, Harvey, White, Hood, & Sherif, 1961). According to the common ingroup identity model (Gaertner & Dovidio, 2000), the incorporation of members of different groups within a common, inclusive identity can enhance the perceptions of similarity between people belonging to different groups. Therefore, a superordinate identity may inhibit the identification of alternative audiences because of the increased perceived similarity with members of other groups (e.g., disproportionately affected groups). According to the social identity theory (Tajfel, 1982; Turner, 1987), part of the social process of becoming a member of any group is the identification with one or more members of this group. The use of different characters in the message is, then, thought to overcome the risk of othering processes and, at the same time, promote identification with one or more characters.

The Present Study

The main aim the present study was to investigate the effect of gain-framed messages and the creation of a superordinate identity to persuade people to carry out HIV/AIDS protective behaviors. Specifically, we examined the reach and impact of a mass media campaign to promote safer sex behavior and voluntary HIV counseling and testing among the Italian adult population, with a special emphasis on men who have sex with men (MSM) and migrant people. Indeed, in Italy, MSM and migrants can be identified as an important part of the HIV epidemic. For instance, about 7% of a sample of 15,519 Italian adult MSM who had had sex with another man in the last

year were HIV-positive (Prati et al., 2013). Moreover, in Italy, about a quarter of all new HIV

diagnoses made in 2011 involved migrants (ECDC, 2013). Finally, there is evidence of ongoing

post-migration HIV acquisition in Italy (Pezzoli et al., 2009). Among the general population in

Italy, in 2012, 3,898 newly diagnosed HIV infections were reported, resulting in a rate of 6.4 per

100,000 population (ECDC/WHO, 2013). Furthermore, at the end of 2012 the estimated HIV

prevalence among the general population in Italy was 0.28 per 100 adults (Camoni et al., 2014).

Heterosexual contact is the primary route of HIV transmission in Italy the majority of HIV

infections have occurred among Italian citizens and migrant people and MSM are

disproportionately affected by the HIV/AIDS (Suligoi et al., 2012).

The 'United against AIDS' Campaign

'United against AIDS' was the 2012-13 Italian National HIV/AIDS prevention campaign to

promote safer sex behavior and voluntary HIV counseling and testing. The 'United against AIDS'

campaign included television and radio public service announcements, print materials (e.g., posters,

brochures), web-based advertisements, and cinema and newspaper advertisements. The campaign

ran for four weeks, two weeks on December 2012 and two weeks between February and March

2013.

The campaign used gain-framed messages (O'Keefe & Jensen, 2009; Tversky & Kahneman,

1981), emphasizing benefits and advantages of safer sex behavior and getting HIV test. Moreover,

the use of different characters as well as the slogan aimed at creating a superordinate identity

(Gaertner et al., 1993; Sherif et al., 1961) and transform members' perceptions of group boundaries

such as "we are all in this together" (i.e., 'AIDS is everyone's concern'). Specifically, the public

service announcement featured a montage of people emphasizing benefits and advantages of safer

sex behavior and getting HIV test and, at the same time, communicated the idea that 'AIDS is

everyone's concern'. Instead of eliciting feelings of fear, the conceptual basis of this video was to

promote preventive behaviors through people's identification with the characters. Different adult

characters were used: an old man, a heterosexual couple with a pregnant woman, a couple of lesbian

girls, a heterosexual couple with a black man, a gay man, and a famous Italian actor (Raoul Bova) inviting to get HIV test and enact safer sex behaviors. The gay man was identified because he spoke about his same-sex partner and lesbian woman because she hug her same-sex partner. Their appearance allowed the identification of the other characters. To promote voluntary HIV counseling, the message of the campaign included a reference to the Italian National AIDS Help-Line.

Research Overview

To sum up, we examined the coverage and impact of 'United against AIDS' mass media campaign on safer sex behavior and voluntary HIV counseling and testing. To this end, we carried out two studies. Because this mass media campaign was conducted nation-wide, we were not able to identify an experimental and a control group based on geographic areas in which the campaign was conducted or was not conducted. Given the problems associated with making valid inferences about the impact of nation-wide campaigns, we adopted the same strategy that was used by Middlestadt et al. (1995) who compared the responses by individuals who were or were not exposed to the campaign. If exposure to the campaign is not dependent on relevant confounding variables (i.e., an extraneous variable such gender or age that may correlate with both the dependent and the independent variable and, therefore, is able to create a spurious association between the dependent and the independent variable), this comparison can provide useful information to investigate campaign effects using a longitudinal study. In addition to gender and age as confounding variables, we decided to include partnership status and religious faith because they have long been recognized as major factors influencing sexual behaviors (e.g., Hasnain, Sinacore, Mensah, & Levy, 2005; Macaluso, Demand, Artz, & Hook, 2000; McCree, Wingood, DiClemente, Davies, & Harrington, 2003). While the analysis of the degree of exposure to examine the impact of a campaign has definite advantages, such investigation requires assessments of the same variables among the same participants before and after the campaign. To this end, in Study 1, we conducted a quasi-experimental design study with three samples of participants: general population, MSM, and

migrants. To gather additional information about the impact of the campaign, in Study 2, we carried out a time series design study to analyze the archival data of the Italian National AIDS Help-Line. We used a design that made use of multiple assessments, which had the effect of reducing internal validity threats. A previous study has found that a media campaign can increase HIV information seeking (Davis et al., 2011). Specifically, the authors found swift temporal media effects on information seeking; this result is consistent with a heuristic processing model of more media effects as opposed to elaborated processing models (Todorov, 2009) that assume behavior change over the long-term.

<div align="center">**Study 1**</div>

Method

  Participants. Three different groups of participants were recruited: general population ($n =$ 858), MSM ($n = 109$), and migrants ($n = 211$). Only respondents who took part in both surveys — pre and post campaign — and who were sexually active in the previous six months before each interview were considered for analyses of reach and impact of the campaign.

  Concerning the general population, 50.4% were males and 49.6% females. The mean age was 46.81 years ($SD = 15.45$) and ranged from 18 to 83 years. Among MSM, the mean age was 34.82 years ($SD = 10.68$) and ranged from 19 to 65 years. As for migrants, the gender distribution of participants was 50.2% male and 49.8 female. Mean age was 33.96 years ($SD = 11.43$), ranging from 19 to 81.

  Procedure. We conducted a one-group pretest/post-test design survey study. To collect data from the general population, a computer-assisted telephone survey was conducted, using random digit dialing. In order to ensure that respondents were demographically representative of the general population, proportional quota sampling was used, with quotas based on gender, age group, and region. The first wave of interviews took place between October and November 2012. Participants were required to be 18 years or older. The total number of calls where potential participants had responded was 11,427 and 2,018 (17.66%) interviews were completed. The second wave of

interviews took place on April 2013, when the campaign had ended. Participants who took part in

the first survey were contacted after an interval of six months, using a similar computer-assisted

telephone survey. Through a procedure based on a maximum of 12 contacts, the final response rate

was 66.11% (n = 1124). We used a multiple logistic regression analysis to determine factors

affecting attrition. Specifically, a dichotomous variable (a variable that takes on one of only two

possible values when observed or measured) was constructed to reflect attrition at T2 (0 = *stayed in*;

1 = *dropped out*). Attrition was not associated with gender (*OR* = 1.17, 95% CI = 0.96-1.44, *p* =

.122), age (*OR* = 1.00, 95% CI = 0.99-1.01, *p* = .546), partnership status (*OR* = 0.99, 95% CI =

0.75-1.30, *p* = .942), religious faith (*OR* = 0.97, 95% CI = 0.74-1.29, *p* = .871), and unprotected

sexual intercourse with multiple partners (*OR* = 0.97, 95% CI = 0.59-1.59, *p* = .896). However,

participants who dropped out at Time 2 had a lower likelihood of being HIV tested (*OR* = 0.81,

95% CI = 0.66-0.99, *p* = .042) and a higher likelihood of having had unprotected sexual intercourse

with someone of unknown HIV status (*OR* = 2.12, 95% CI = 1.15-3.93, *p* = .017).

Given that MSM and migrants constitute only a small proportion of the population, different

recruitment strategies were used because traditional probability sampling methods are not feasible.

MSM participants were recruited through e-mail lists and web-based communities. MSM

participants were asked to complete a self-administered anonymous online survey. A total of 282

MSM participants agreed to participate in the study and completed the survey. Of these, 257

participants (91.2%) agreed to be contacted by email within the next sixth months. In the second

wave, MSM participants were contacted by email and 119 completed the survey, with a response

rate of 46%. Attrition was not associated with age (*OR* = 0.99, 95% CI = 0.97-1.02, *p* = .549),

partnership status (*OR* = 0.98, 95% CI = 0.43-2.23, *p* = .969), religious faith (*OR* = 0.65, 95% CI =

0.36-1.17, *p* = .152), HIV testing (*OR* = 0.58, 95% CI = 0.25-1.35, *p* = .426), unprotected sexual

intercourse with someone of unknown HIV status (*OR* = 1.61, 95% CI = 0.79-3.27, *p* = .189), and

unprotected sexual intercourse with multiple partners (*OR* = 0.69, 95% CI = 0.30-1.58, *p* = .375).

Finally, we decided not to include 10 participants because they were not sexually active in the previous six months before each interview.

We selected three survey sites for the recruitment of migrant participants: workplace, migrant shelter/camp, and center for the teaching of Italian as a second language. Migrant participants were asked to complete a self-administered anonymous paper-and-pencil survey. The overall response rate was 87.1% and 262 migrant participants completed the questionnaire. In the second wave, 211 (80.5%) migrants participants agreed to complete the second survey. Attrition was not related to gender ($OR = 0.66$, 95% CI = 0.32-1.34, $p = .245$), age ($OR = 1.00$, 95% CI = 0.97-1.04, $p = .794$), partnership status ($OR = 1.50$, 95% CI = 0.68-3.28, $p = .314$), religious faith ($OR = 0.71$, 95% CI = 0.27-1.85, $p = .713$), unprotected sexual intercourse with someone of unknown HIV status ($OR = 2.90$, 95% CI = 0.96-8.71, $p = .058$), and unprotected sexual intercourse with multiple partners ($OR = 0.96$, 95% CI = 0.26-3.59, $p = .953$). However, participants who dropped out at Time 2 had a higher likelihood of being HIV tested ($OR = 2.32$, 95% CI = 1.15-4.70, $p = .019$).

Variables. Study phase (pre-campaign and post-campaign) and campaign exposure were the main independent variables. To measure exposure, we used visual or verbal prompts and asked participants whether they had heard of the United against AIDS campaign. Using a checklist, participants who reported having been exposed to the campaign were asked to indicate the campaign channels they were exposed to, including printed materials, television and radio public service announcements, web-based advertisements, and cinema and newspaper advertisements.

The main outcomes were recent (in the previous six months) HIV risk behaviors and lifetime HIV testing. HIV risk behaviors were measured by two items investigating unprotected sexual intercourse with someone of unknown HIV status and unprotected sexual intercourse with multiple partners[1].

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[1] The list of survey questions is available upon request to the corresponding author.

Statistical analysis. The significance of the difference between two correlated proportions based on matched-pair samples was assessed with respect to each of the following dichotomous variables: (1) having had HIV testing; (2) having had unprotected sexual intercourse with multiple partners; and (3) having had unprotected sexual intercourse with someone of unknown HIV status. Thus, our study employed dichotomous dependent variables in a pretest-posttest design to evaluate change among participants who had been exposed to the campaign and those who had not been exposed. To determine whether the row and column marginal frequencies are equal, McNemar's test and the exact alternative due to Liddell (1983) were applied to 2×2 contingency tables in which the row variable is the proportion of participants before the campaign (having had HIV testing or not having had HIV testing) and the column variable is the proportion of participants after the campaign. These tests were used to evaluate the null hypothesis that the probability of undertaking HIV testing and having unprotected sexual intercourse with multiple partners or with someone of unknown HIV status did not change after the campaign. We used StatsDirect statistical software version 2.8.0 (England: StatsDirect Ltd. 2013) to calculate the McNemar's test and the estimates of relative risk (R i.e. the ratio of the probability of an event occurring in a group to the probability of the event occurring in a comparison group) and F statistic of the Liddell test.

Results

About 78.3%, 67.5%, and 57.8% of the general population, MSM, and migrant respondents, respectively, reported exposure to the campaign. Exposure to the campaign was not dependent on relevant confounding variables in all three samples (see Table 1). Television was by far the most important channel of the campaign (see Table 2). Almost half of the MSM and one out of five migrant participants reported an exposure to web-based advertisements.

Unprotected sexual intercourse with multiple partners. For the general population, the probability of having unprotected sexual intercourse with multiple partners decreased significantly in the subsample that was exposed to the campaign ($\chi^2(1) = 4.23$, $p = .040$, $r = .08$; $R = 0.48$, $F = 1.93$, $p = .039$) and did not change in the unexposed subsample ($\chi^2(1) = 0.08$, $p = .773$, $r = .02$; $R =$

1.00, $F = 0.86$, $p = .999$). For MSM participants, the probability of having unprotected sexual intercourse with multiple partners did not decrease after the campaign in the exposed ($\chi^2(1) = 2.67$, $p = .606$, $r = .06$; $R = 1.50$, $F = 1.29$, $p = .607$) and unexposed subsample ($\chi^2(1) = 0.00$, $r = .00$; $p = 0.999$; $R = 1.33$, $F = 1.00$, $p = .999$). Concerning migrant participants, we did not observe any change among the exposed ($\chi^2(1) = 0.44$, $p = .505$, $r = .08$; $R = 2.00$, $F = 1.50$, $p = .508$) and the unexposed subsample ($\chi^2(1) = 0.00$, $p = .999$, $r = .00$; $R = 1.33$, $F = 1.00$, $p = .999$).

Unprotected sexual intercourse with someone of unknown HIV status. For the general population, the likelihood of having unprotected sexual intercourse with someone of unknown HIV status did not change in the unexposed ($\chi^2(1) = 0.57$, $p = .450$, $r = .06$; $R = 0.40$, $F = 1.67$, $p = .453$) and exposed subsample ($\chi^2(1) = 0.21$, $p = .646$, $r = .02$; $R = 0.73$, $F = 1.22$, $p = .648$). For MSM participants, the probability of having unprotected sexual intercourse with someone of unknown HIV status decreased after the campaign in the exposed subsample ($\chi^2(1) = 6.75$, $p = 0.004$, $r = .31$; $R = 11.00$, $F = 5.50$, $p = .006$), but did not change in the unexposed subsample ($\chi^2(1) = 0.00$, $p = .999$, $r = .00$; $R = 0.75$, $F = 1.00$, $p = .999$). With regard to migrant participants, we did not find any change among the exposed ($\chi^2(1) = 1.50$, $p = .221$, $r = .15$; $R = 5.00$, $F = 2.50$, $p = .219$) and the unexposed subsample ($\chi^2(1) = 0.00$, $p = .999$, $r = .00$; $R = 0.67$, $F = 1.00$, $p = .999$).

Lifetime HIV testing. For the general population, the probability of undertaking HIV testing did change after the campaign in the exposed subsample ($\chi^2(1) = 11.08$, $p < .001$, $r = .13$; $R = 3.04$, $F = 13.00$, $p < .001$) but not in the unexposed subsample ($\chi^2(1) = 1.33$, $p = .248$, $r = .09$; $R = 3.86$, $F = 3.00$, $p = .250$). Specifically, in the exposed participants it was observed an increase of 2% of lifetime HIV testing. For MSM participants, the probability of undertaking HIV test did not change in the exposed ($\chi^2(1) = 3.20$, $p = .074$, $r = .23$; $R = 4.63$, $F = 5.00$, $p = .063$) and the unexposed subsample ($\chi^2(1) = 0.00$, $p = .999$, $r = .00$; $R = 1.00$, $F = 1.00$, $p = .999$). Because none of the migrant participants in the present study had undertaken HIV testing after the campaign, we did not calculate any statistical test.

Study 2

Method

Data. We collected the daily number of calls made to the Italian National AIDS Help-Line

between the beginning of January 2013 and the end of May 2013. Since events occurring at the

same point in time could have an influence on the dependent variable, we examined the Italian press

to look for coincident events. We did not find any major event that could theoretically be linked to

an increase or a decrease in the number of calls during the campaign. Because we did not have the

possibility to control for any other influence, we did not report the impact of the campaign during

the first two weeks of December 2012 due to the co-occurrence of the World AIDS Day (celebrated

on 1 December 2013). In Italy, the World AIDS Day (and more generally, the first week of

December) is an opportunity for public and private organizations to raise awareness about

HIV/AIDS.

Statistical analysis. Statistical analysis was performed using SPSS 22.0 (SPSS, Inc,

Chicago, IL). We considered as a dependent variable for the impact of the campaign the daily

number of calls at the Italian National AIDS Help-Line. A time series analysis (a technique used to

identify patterns in time series data and generate predictions) was used to identify the potential

effect of the independent variable, that is, the period during which the campaign was conducted or

was not conducted. We used the SPSS expert modeler for Autoregressive Integrated Moving

Average (ARIMA) models. Thus, the time series data were analyzed and fitted with an ARIMA

model (p, d, q), where: p represents the autoregressive term which describes the dependency among

successive observations or the lingering effects of preceding scores; d the differentiating terms

needed to make a nonstationary time series stationary; q the moving average terms which describe

the persistence of a random shock from one observation to the next. We checked if any visible

secular trend and residual autocorrelation were present. One special kind of ARIMA model is called

interrupted time series model. In this model, an indicator variable containing discrete values that

flag the occurrence of an event affecting the time series is added. In the present study, we added to

the model a dichotomous variable that took the value 0 to represent the period of time (i.e., days) during which the campaign was not being realized and the value 1 to represent the period of time during which it was being realized.

Results

From January 2013 to May 2013, the Italian National AIDS Help-Line received 13,326 calls. Figure 1 presents the daily number of calls at the Italian National AIDS Help-Line before, during, and after the campaign. Two peaks were observed in the period during which the campaign was conducted. No peaks were observed in the month following the campaign. Therefore, we decided to investigate whether the campaign had a pulse effect, that is, an abrupt and temporary effect. Specifically, we added to the model a dichotomous variable that took the value 0 prior the campaign, the value 1 during the campaign, and returned to 0 thereafter. The ARIMA model selected by the Expert Modeler for the temporary effect of the campaign on number of calls at the Italian National AIDS Help-Line revealed a significant regression coefficients (parameter estimate = 0.478, $t = 4.635$, $p > .001$). Regression coefficients represent the mean change in the number of call as a function of period (when the campaign was or was not carried out). The positive sign of the parameter estimate indicates that the daily number of calls at the Italian National AIDS Help-Line significantly increased during the campaign. The model fitted the data well (stationary $R^2 = .23$) and the Ljung-Box test value of 12.367 ($p = .777$) along with a mean absolute percentage error (MAPE) of 14.72% demonstrated the adequacy and statistical appropriateness of the model.

Discussion

The purpose of this study was to test the coverage and impact of a HIV/AIDS mass communication campaign whose message was gain-framed messages and promoted the creation of a superordinate identity. This work contributes to and builds on existing literature on mass media interventions for HIV (LaCroix et al., 2014; Vidanapathirana et al., 2005) as well as the role of gain-framed appeals (O'Keefe & Jensen, 2009) and social identity theory (Tajfel, 1982; Turner, 1987).

Concerning the coverage of the HIV/AIDS mass communication campaign, almost eight out of ten participants from the general population reported that they had been exposed to the campaign. The coverage of the campaign was lower among the MSM and migrant participants. Nonetheless, the majority of MSM and migrant participants was exposed to the campaign. The results of this evaluation suggest that the coverage of this campaign among the general population was not due to the combination of multiple channels, but to the use of television public service announcements. It is interesting to note that web-based advertisements were the second most frequently reported channel for MSM and migrants: almost half of the MSM and one out of five migrant participants reported an exposure to web-based advertisements. Future campaigns targeting MSM and migrant people should consider targeted efforts in websites identified through formative research to reach a high level of exposure. Furthermore, health campaigns or interventions could incorporate not only institutional HIV messages delivered in the World Wide Web but also person-centered HIV blogs (Neubaum & Kramer, 2014).

The present study found mixed evidence of the impact of the campaign on key behaviors of interest among both the general population and MSM, including HIV testing and HIV risk behavior. Specifically, among the general population the probability of having unprotected sexual intercourse with multiple partners and undertaking HIV test changed significantly and in the expected direction after the campaign only in the subsample that was exposed to the campaign. However, the probability of having unprotected sexual intercourse with someone of unknown HIV status did not decrease after the campaign among the general population. The nature of the general population's behavior being safe in one context but not in another context is only seemingly ambivalent and contradictory. If we take into consideration relationship dynamics, we may find a plausible explanation. The majority of the adult Italian people are in a long-term cohabitation relationship and most of those involved in such relationships report that the HIV status of the partner is unknown (Prati, Mazzoni, & Zani, 2014; Prati, Zani, et al., 2014). Therefore, the most likely explanation is that the campaign reduced the likelihood of having unprotected sexual intercourse with multiple

partners (e.g., casual sexual partner) but did not change the extent to which participants practiced unprotected sexual intercourse with a committed relationship partner whose serological status is unknown.

The probability of having unprotected sexual intercourse with someone of unknown HIV status decreased after the campaign in the exposed MSM subsample and this change was not significant in the unexposed MSM subsample. It is interesting to note that the general population and the MSM samples provided evidence of change after the campaign in two different HIV risk behaviors. Given that MSM report a higher prevalence of partnership concurrency (i.e., multiple partners in the same period) compared to heterosexual men and women (Glick et al., 2012), we infer that the campaign did not have an impact on a key HIV risk behavior that explains why MSM are at higher risk for HIV than the general population. It seems likely that the campaign had an influence on the probability of having unprotected sexual intercourse with someone of unknown HIV status among the MSM sample because MSM are likely to adopt seroadaptive behaviors as prevention approaches based on knowing one's own and one's sexual partners' serostatus (McFarland et al., 2011). Therefore, the MSM sample may have been more predisposed to change this behavior than the general population.

In the first study, we employed a quasi-experimental design in which an experimental group consisting of those who were exposed to the campaign was compared to a control group consisting of those who were not exposed to the campaign. The design and the results of our study support the view that different alternative explanations (e.g., history and testing effects) for the impact of the campaign could be excluded to a considerable degree. Although the design of the evaluation of health mass communication campaigns executed in entire countries (Palmgreen et al., 2008) cannot be considered a gold standard design such as randomized controlled trials (Hornik, 2002), the results strongly suggest that the changes that we documented are at least partially due to the impact of the campaign.

We note that the campaign did not have an impact on migrant participants. To our opinion, one reason for this result was that messages effective with that segment were not developed. Future campaigns targeting migrant people should consider ethnographic formative research methods and take into account linguistic barriers and cultural beliefs to increase the efficacy of such interventions. Previous literature on message targeting (Kreuter, Strecher, & Glassman, 1999) has indicated that the one-size-fits-all approach might be effective under certain circumstances, but a tailored communication can better address unique needs and concerns of the population.

One criticism of the campaign may be that it was less effective in reaching the two disproportionately affected groups (i.e., MSM and migrant people). This is especially true because the campaign positions itself as all-encompassing by including different characters. It should be noted, however, that the use of different characters was thought to overcome the risk of othering processes (Slavin et al., 2007) as well as encourage identification with one or more characters according to the Social Identity Theory (Tajfel, 1982; Turner, 1987). Othering processes occur whereby people seek to deflect the messages of a campaign away from themselves to identify other groups as the audience. Several health communication scholars (e.g., Dutta & Basu, 2011) have directly or indirectly dealt with the concept of othering in mass media campaigns whereby they have argued that it has often led to silencing, exclusionary and stigmatizing impact on marginalized communities. As pointed out by Khan (2014), mass media campaign efforts pertaining HIV prevention have been far from emancipatory. The findings seem to suggest that the campaign did overcome the risk of othering processes, however at the price of a reduced involvement of disproportionately affected groups. One implication of this study was that the incorporation of members of different groups within an inclusive identity to enhance a superordinate identity following the Common Ingroup Identity Model (Gaertner & Dovidio, 2000) can be more difficult for disproportionately affected or minority groups compared to the majority. The combination of mass media campaigns (including messages aimed at creating a superordinate identity) with on-the-ground focused interventions among specific communities perceived to be at high-risk of HIV

infections may be considered a tradeoff between involving members of disproportionately affected groups and avoiding the risk of othering processes. In addition, we note that the use of gain-framed messages (O'Keefe & Jensen, 2009; Tversky & Kahneman, 1981) may have contributed to the reduction of the risk of othering processes. People exposed to fear-based messages can discount the relevance of the messages to themselves and identify alternative audiences (Slavin et al., 2007).

One of the main results of our study is that health mass communication campaigns can be beneficial for voluntary HIV counseling (second study). Results from the time series analysis lead to the conclusion that the number of calls at the Italian National AIDS Help-Line significantly increased during the campaign. However, this effect declined rapidly at the end of the campaign. Thus, the findings of this study suggest that health mass communication campaigns, as a stand-alone and short-term intervention, are unlikely to have a long term effect. One of the ways to obtain a longer effect is probably based on repeated campaign exposure over time for the population. From a theoretical point of view, the immediate and short-term effects of this media campaign provide support for the heuristic processing model rather than the elaborated processing model (Todorov, 2009) that postulate behavior change over a long time period (Davis et al., 2011). It is likely that this effect is due to the increased knowledge and salience of the Italian National AIDS Help-Line. A previous experimental study has shown that exposure to television programs about AIDS can increase knowledge about the disease and heighten its salience (Gantz & Greenberg, 1990). We note that we have demonstrated the effect of the campaign on voluntary HIV counseling using a time-series design. This design has the unique advantage of illuminating secular trends with regard to behaviors before the campaign took place. A limitation of this second study was that we did not have access to the content of the calls made at the Italian National AIDS Help-Line. Therefore, we are not able to determine if the quality (e.g., topics), besides the quantity, did change during the campaign.

The first study results are subject to several limitations too. The use of self-report measures may be affected by social desirability, underreporting of sensitive information, and recall bias. In

addition, we cannot rule out the possibility that the relationship between exposure to the campaign and key behavioral outcomes was caused by a third variable. However, it should be noted that none of the broad range of potential confounders was related to exposure to the campaign in all the three samples. Finally, the small size of the MSM and migrant subsamples may raise the question of their representativeness.

Despite these limitations, the unique merit of the present study was to investigate the reach and the impact of an HIV/AIDS campaign that used gain-framed messages (O'Keefe & Jensen, 2009; Tversky & Kahneman, 1981) that promote a superordinate identity (Gaertner et al., 1993; Sherif et al., 1961). To our knowledge, this is the first study that investigates the impact of an HIV/AIDs campaign that uses a message designed to stimulate a superordinate identity. The impact of the campaign was complex and varied across participants. The complexity of our findings is extremely important because it demonstrates that we can find evidence of effectiveness of HIV/AIDS campaign in one context but not in another context. The finding that the campaign did not have an impact on migrant participants calls for future campaigns including a strong ethnographic component as a part of their formative research. Such campaigns will be useful to further investigate the potential of this intervention among the migrant population, especially in light of the lack of evidence-based HIV prevention interventions for this target.

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Table 1

Summary of Logistic Regression Analyses Predicting Campaign Exposure

	B	*SE*	*p*	*OR*	95%CI
General population					
Gender(female)	-0.34	0.18	.059	0.72	0.51-1.01
Age	0.01	0.01	.063	1.01	1.00-1.03
Partnership status (married/cohabitating)	0.21	0.24	.374	1.24	0.78-1.96
Having a religious faith	0.39	0.22	.075	1.47	0.96-2.25
HIV testing (wave 1)	0.00	0.18	.988	1.00	0.71-1.42
Unprotected sexual intercourse with someone of unknown HIV status (wave 1)	0.19	0.64	.761	1.21	0.35-4.23
Unprotected sexual intercourse with multiple partners (wave 1)	-0.38	0.46	.416	0.69	0.28-1.70
MSM					
Age	0.01	0.02	.538	1.01	0.97-1.06
Partnership status (married/cohabitating)	0.48	0.59	.417	1.62	0.51-5.16
Having a religious faith	-0.30	0.44	.499	0.74	0.31.1.77
HIV testing (wave 1)	-0.87	0.62	.158	0.42	0.12-1.40
Unprotected sexual intercourse with someone of unknown HIV status (wave 1)	-0.22	0.57	.703	0.80	0.26-2.47
Unprotected sexual intercourse with multiple partners (wave 1)	-0.17	0.65	.791	0.84	0.23-3.02
Migrants					
Gender(female)	0.01	0.43	.980	1.01	0.44-2.34
Age	-0.03	0.22	.895	0.97	0.63-1.50

Partnership status (married/cohabitating)	0.18	0.51	.726	1.19	0.44-3.23
Having a religious faith	1.13	0.70	.109	3.08	0.78-12.21
HIV testing (wave 1)	0.23	0.47	.62	1.26	0.51-3.15
Unprotected sexual intercourse with someone of unknown HIV status (wave 1)	-1.03	0.90	.253	0.36	0.06-2.09
Unprotected sexual intercourse with multiple partners (wave 1)	-0.26	0.63	.677	0.77	0.23-2.63

Note. CI = confidence interval for odds ratio (*OR*).

Table 2.

Percentage of Exposure to Different Campaign Channels

Channel	General population	MSM	Migrants
Television	88,6	79.7	83.6
Radio	6.3	7.6	11.5
Cinema	3.5	11.4	2.5
Web	2.8	45.6	21.3
Newspaper	2.4	19.0	4.1
Printed materials	1.3	6.3	4.9

Figure 1. Characters of the Campaign.

Figure 2. Daily number of calls at the Italian National AIDS Help-Line before, during, and after the campaign. Gray shades represent the campaign.