The role of prejudice and prior contact in support for evidence-based interventions to reduce drug-related deaths: A cross-sectional study.[Preprint]

Manuscript Title: The role of prejudice and prior contact in support for evidence-based interventions to reduce drug-related deaths: A cross-sectional study.

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Abstract

Background: Stigmatized attitudes, opinions on opioid use, and prior contact with people who use drugs (PWUD) contribute to what policies are publicly supported and implemented to reduce drug-related deaths. This study examined how these variables relate to policy support for implementation of supervised injection sites, laws protecting bystanders at the scene of an overdose, and over-the-counter naloxone.

Methods: An opportunity sample of 472 adults across the Island of Ireland completed an online survey. Hierarchical linear regression was performed to examine associations between respondent attitudes and policy support. Mediation analysis explored how stigma mediated the relationship between prior contact and policy support. Open-ended questions explored attitudes further and were analysed using codebook Thematic Analysis.

Results: The final model accounted for 29% of the variance in policy support. Unsympathetic attitudes towards people who use opioids predicted less policy support (β=-.18) and agreement that PWUD were not criminals predicted more policy support (β=.14). Medium or high levels of familiarity with PWUD (compared to low) reduced social stigma, avoidance, and disgust which increased levels of policy support. Medium familiarity (compared to low) showed a small indirect effect via sympathetic attitudes and condemnation. Meta-inferences from the qualitative analysis evidenced mechanisms of stigma and prior contact.

Conclusion: Stigma reduction programs should consider the role of prejudice and target negative emotional reactions such as lack of sympathy towards PWUD. Stigma reduction programs should be informed by the lived or living experience of PWUD, families and carers, to help increase social acceptance, understanding, and policy support.

Keywords: social stigma, contact hypothesis, policy attitudes, supervised injection site, naloxone

Introduction

Opioid drug-related deaths remain a global public health concern. The Republic of Ireland (ROI) has the 3rd highest opioid drug-related deaths in Western Europe, with Northern Ireland (NI) having comparable rates (Office for National Statistics, 2022). ROI and NI consult on the use of evidence-based approaches for the reduction of drug-related deaths, as they share a land-border, and are legally obliged to collaborate on policy (British Irish Council, 2021; Department of Health, 2018). One known barrier to the successful implementation of evidence-based policy to reduce drug-related deaths is stigma and negative public attitudes (Horvitz-Lennon, 2020; McGinty et al., 2018a; Shorter et al., 2023). For example, the public has the political power to stop or limit the implementation of evidenced-based interventions (Allen et al., 2015; Allen et al., 2019; Oliver et al., 2014; Randall, 2011; Ritter, 2009) leaving communities at risk for more drug-related deaths. Views on drug use as a health or criminal issue can also play a role in public support (Bachhuber et al., 2015; McGinty et al., 2018b). Understanding how public attitudes relate to policy support is crucial to inform campaigns to reduce stigma towards people who use drugs (PWUD) and actions to reduce drug-related deaths

Social stigma is a significant predictor of lack of support for drug consumption rooms (McGinty et al., 2018b; Shorter, 2023), naloxone (Adams et al., 2021; Baker et al., 2019; Calabrese & Bell, 2019; Kennedy-Hendrick et al., 2017; Taylor et al., 2021), and the integration of multiple harm reduction interventions (e.g., drug consumption rooms, naloxone, and/or drug checking) (Miller et al., 2023; Wild et al., 2021). Prior contact with PWUD has predicted support for policies to reduce drug-related deaths (Adams et al., 2021; Wild et al., 2021). Lower levels of stigma mediated support for harm reduction initiatives among people who had more exposure to media portrayals of PWUD, with a small effect (Wild et al., 2021). Lastly, endorsing the belief PWUD deserve help vs punishment is an important predictor of policy support for supervised injection facilities (Cruz et al., 2007; Kulesza et al., 2015).

Few studies have examined the role of stigma in predicting drug policy support in ROI and NI. One ROI survey found a significant portion endorsing fear and social avoidance of PWUD (Bryan et al., 2000). An ROI opinion poll showed a portion of people who expressed avoidance, fear, and blame towards PWUD (Citywide, 2016). Singleton (2010) conducted a cross-sectional UK telephone survey including NI participants; it illustrated a

significant portion of 63 NI participants were unwilling to live near PWUD and expressed mistrust towards PWUD.

The current study will examine the relationship between social stigma and drug policy support by incorporating the Stigma of Addictions model (Corrigan et al., 2017) which integrates stereotypes; prejudice; and discrimination as opposed to studying each factor separately (Calabrese & Bell, 2019; Kulesza et al., 2015; Baker et al.,2019; Calabrese & Bell, 2019; Kennedy-Hendrick et al., 2017; McGinty et al., 2018; Wild et al., 2021) and will provide a comprehensive view of how stigma relates to support. In addition, incorporating Intergroup Contact Theory (Pettigrew & Tropp, 2006) as prior contact with PWUD is a predictor of stigma, but evidence is inconclusive regarding its relationship with policy support (Adams et al., 2021; Taylor et al., 2021). There is limited understanding in European contexts, most evidence to date has used state or national cross-sectional online surveys in the USA and Canada.

The study aims to examine how stigma relates to policy support for evidence-based interventions to reduce drug-related deaths in the ROI and NI. We hypothesised that 1) there will be moderate to high level of stigma towards PWUD; 2) higher levels of social stigma and prejudice will be correlated with lower levels of policy support; 3) higher levels of social stigma will be the strongest predictor of policy support compared to all other variables (prejudice, prior contact, considering PWUD as criminals, gender, employment status); and 4) prior contact will mediate stigma which will indirectly predict policy support. We sought other voluntary information to help understand the participants' perspectives though an open-ended question.

Methods

A mixed methods convergent parallel design (Creswell, 2021) was used. Meta inferences were made by synthesizing convergent and divergent results of the qualitative data and measures. STROBE cross sectional guidelines were used for reporting (von Elm et al., 2007).

Participants

The sample included 472 participants in total. Most of the sample were single (n=245; 59%), female (n=257;65%), 18-29 years (n=232; 56%), White (N=404 or 98%), educated to degree level (n=154, 37%) or higher (n=142, 34%). Many participants were employed

(n=184, 44%) or a student (n=187, 45%), with the majority living in NI (N=368; 79%) and in an urban area (N=236, 57%). Participants were recruited between September 2020 until January 2021 using opportunity sampling methods through 1) networks within the community sector across ROI and NI (e.g. health trusts, local drug, alcohol and homeless charities) 2) an email list sent to university staff (e.g. staff ranging from administrative, academic, student support services) and students (e.g. undergraduate and graduate students) who attend XX university and 3) social media advertising using the authors personal social networks on Twitter and paid advertising using Facebook. Adults aged 18 years or over, living and eligible to vote in ROI or in NI could participate.

Procedures

Participants were presented with an online survey containing demographic questions (e.g., sex, age group in years, prior contact, ethnicity, highest level of education), followed by a definition of opioids, policies to reduce drug-related deaths, and measures on social stigma and prejudice (see online supplement one for definition of terms used in the survey). The survey took 15-20 minutes to complete. At the end of the survey the participants were asked to participate in a Single Category Implicit Association test on the Inquisit platform (https://www.millisecond.com) (see **XX** for results of how implicit attitudes predicted support); they were then re-directed back to Qualtrics to enter an optional random draw and be debriefed.

Materials

Social stigma

Social stigma was measured using a scale by Kennedy- Hendricks et al. (2017) which measured stereotypes (perceptions of dangerousness) and willingness to endorse discrimination (e.g., social distance and blame) towards PWUD. The scale was adapted to fit the context of the study, e.g. '*people addicted to prescription pain medication*' was substituted with '*people addicted to opioids'* on a five-point Likert scale (1=agree to 5=not agree). Internal consistency for this scale was good (Cronbach's alpha=.80).

Prejudice

The 10-item Attitudes Towards Injection Drug Users scale assessed the most common emotional reactions or prejudicial attitude towards PWUD (Brener &Von Hippel, 2008). The scale was adapted by substituting the term '*injection drug use/user*' with '*opioid use/user*'

using a five-point Likert scale (1=agree to 5=not agree). An exploratory factor analysis identified a three-factor solution, confirmed using parallel analysis (Vivek et al., 2017). The three-factor solution was: 1) *Avoidance and disgust* (α=.88) 2) *Condemnation (*α=.71*),* and 3) *Sympathy (*α=.77*).*

Prior contact

Prior contact was assessed using the Level of Familiarity Questionnaire (LOF) (Brown, 2011). The scale was adapted by replacing the words "*severe mental illness*" with "*opioid use*". The LOF is a rank ordered scale. The scale has several statements denoting a familiarity category based on participant experience as either low, medium, or high familiarity ranging from 1 to 11 (1=little familiarity, 7=medium familiarity and 11=most familiarity). The lowest level of contact is ranked from 1-5 which is equivalent to passing someone on the street one believes to be a person who used opioids (e.g., "*I have observed, in passing, a person I believe may have used opioids"*). Medium LOF ranked between 6-10 describes professional relationship (e.g., "*I have worked with a person who has had used opioids at my place of employment"*). The highest level of intimacy is at rank order 11, where a person has a used opioids themselves (e.g., "*I use opioids"*). Participants LOF is categorized (low, medium, and high) based on agreement of the highest-ranking statement.

Opinions towards opioid use

Opinions towards opioid use as a health or a criminal issue were assessed using two items from the Drug Policy Opinion scale (Cruz et al., 2007). The items were adapted by substituting the word '*drug user'* with '*opioid user'* e.g. "*Opioid users are criminals and should be prosecuted by the justice system.*" Both items were scored using a 5-point Likert scale (1=strongly agree to 5=strongly disagree)

Attitudes Towards Opioid Overdose Policies scale.

Six items measured policy support. The first two items assessed for people who used opioids (first item) and family members (second item) to obtain naloxone without a prescription or over the counter (Calabrese & Bell, 2019). Item three measured support towards government spending for substance use treatment and item four measured support for legislation that protects someone who seeks help for themselves or others during an opioid overdose (Kennedy-Hendricks et.al., 2017). The words '*prescription pain medication'* was substituted with '*opioids*' and '*substance abuse treatment'* substituted with '*opioid assisted*

treatment'. Item five measured attitudes towards supervised injection facilities (McGinty et al., 2018). The original measure asked for support for a '*supervised consumption site'* and for this study it was changed to '*supervised injection facility'*. The sixth item assessed attitudes towards prescription drug monitoring which mandates medical professionals to participate in electronic drug monitoring systems. The measure was examined using exploratory factor analysis and yielded a one-factor solution (confirmed with parallel analysis). The single factor was defined as *Attitudes Towards Opioid Overdose Policies* scale. Cronbach's Alpha score for the six items was good at .80. The scoring is a five-point Likert scale (1=strongly oppose to 5=strongly support).

Data analysis approach

IBM SPSS Statistics version 26 was used for descriptive statistics, correlation, hierarchical multiple regression and Mplus version 8.2 for the mediation analyses. Dummy coding was used for variables with over two categories such as age (30-44 years, 45+ years versus reference group 18-29 years), sex (male, other versus reference group: female). Factor scores from the exploratory factor analysis of the policy support, social stigma, and prejudice measures were saved and used in subsequent analyses.

As social stigma has been the strongest predictor of support in the literature, a Hierarchical Multiple Regression (HMR) was conducted with social stigma entered into Model 1 followed by other predictors. A mediation analysis was estimated using the four-step approach proposed by (Baron and Kenny,1986; Igartua and Hayes, 2021) to test whether LOF shapes stigma attitudes to influence support. As per best practice (Kenny, 2021), bootstrapping methods (10,000 replications) were used to generate confidence intervals around the estimate to test that the indirect effect differs from zero. Maximum likelihood estimation was used.

The statements from the open-ended question were analyzed using codebook Thematic Analysis (Braun & Clarke, 2021; Roberts et al.,2019) using the following stages: (1) Identifying source codes; (2) Codebook development; (3) Codebook application; and (4) Data interpretation. The codebook was tested for reliability by using a test-retest of themes and inter-rater reliability of codes, suggested by Miles and Huberman (1994). A small subset of data (20%) was reviewed by (**Authors Name**) and three members of the research team (**Authors Name**) for the test-retest. Discussions involved coding differences resulted in either a consensus over how codes were synthesized or a non-agreement. The test-retest for the

themes resulted in a unanimous agreement (Reliability=13/13+0= 1 High agreement) from all coders (**Authors Name**). The inter-reliability test resulted in adequate agreement amongst the coders (Reliability= 12/12+2=.85 or 85% agreement).

Results

Descriptive statistics and correlations among study variables

The mean scores for individual policy items fell above the midpoint showing moderate levels of support (1=Strongly opposed and 5=Strongly favour). The highest support was for prescription drug monitoring (*M*=4.11, SD=.99), followed by increased spending for opioid substitution treatment (*M*=3.99, SD=1.03). The mean scores for the social stigma scale showed moderate endorsement for stereotypes and discrimination (social stigma *M*=3.01, SD=.82) and the prejudice mean scores were below the midpoint (*M*=2.63, SD=.73). Bivariate correlations between factor scores showed a negative correlation between social stigma and policy support (r (401) =-0.42, p< .01). There was a negative correlation between avoidance and disgust and less policy support (r (406) =-0.44, p<.001). There was a negative correlation between lack of sympathy towards people who use opioids and policy support (r (393) =-0.44, p<.01). Agreeing that opioid use is a health issue was correlated with sympathy (r (395) =0.44, p<.01). A moderate correlation emerged between criminalisation of drug users and policy support (r (411) =0.41 p<.01); or disagreement with criminalising drug use was correlated with higher policy support. All other variables fell below moderate strength (See online supplement two for the remaining correlations).

Hierarchical Multiple Regression

Social stigma explained 14% of the variance in policy support (R^2=0.16, F (1, 362) =68.40, p<.001) in **Model 1,** such that higher levels of stigma was associated with lower levels of support for policies to prevent opioid drug-related deaths (β=-0.40, p<.001). Social stigma dropped from being a significant predictor in Models 2-5 (See online supplement three and four for Models 2-5). The final model (**Model 5 in Table 1)** explained 28% of variance (R^2=0.28, F(19, 344)=7.01, p<.01) and contained all study variables (social stigma, prejudice, LOF, opinions on opioid use, and social demographics). Lack of sympathy (β=-0.18, p<.01) and disagreement with opioid use being a criminal issue (β=0.14, p<.05) were the only significant predictors for policy support.

Table 2 *Hierarchical multiple regression analysis predicting support for opioid overdose policies (N=472) (Model 5)*

Model 5	B	*SE*	β	R^2	ΔR^2	p
				.29* **	.02	**.001**
Constant	-0.54	0.43				
Social stigma	-0.07	0.07	-0.08			.27
Avoidance and disgust	-0.11	0.08	-0.11			.17
Condemnation	-0.06	0.06	-0.06			.27
Sympathy	-0.19	0.07	**-0.18**			**.007**
LOF medium[1]	0.05	0.09	0.02			.72
LOF high[1]	0.09	0.28	0.02			.66
Criminal issue	0.12	0.05	**0.14**			**.030**
Health issue	-0.10	0.06	-0.09			.08
Gender binary (male)[2]	0.02	0.09	0.02			.71
Age 30-44 years	0.03	0.12	0.01			.93
Age 45-59 years	-0.14	0.17	-0.05			.37
Age 60+	0.30	0.36	0.04			.44
Ethnicity	0.32	0.30	0.04			.47
Up to A level	-0.16	0.13	-0.07			.17
Up to degree level	0.02	0.11	0.14			.22
Single	-0.14	0.11	-1.25			.22
Student	0.14	0.10	1.07			.28
Other Employment	-0.16	0.16	-0.10			.32
Household income < 25K	-0.10	0.12	-0.74			.46
Income 25-49K	-0.05	0.11	-0.24			.67
Rural area of residence	-0.17	0.10	-0.09			.06

[1] Compared to Low LOF; [2] Compared to female and non-binary.

Mediation analysis: Level of familiarity shaping stigma to influence policy support.

Mediation analysis was conducted for each aspect of stigma (social stigma, and avoidance/disgust, condemnation, and sympathy). Standardized coefficients are reported for these models unadjusted for age and gender as the demographics were quite homogenous. Step 1 is a necessary stage for each subsequent stage of the mediation analysis and showed that the regression of LOF on policy support (step 1; path c) was statistically significant for medium LOF (β=0.225, p=.013) but not for high LOF (β=0.535, p=.066). The mediation analysis for social stigma found medium (β=0.109, p=.009) and high levels of LOF (β=0.224, p=.004) compared to low LOF reduced levels of social stigma which increased levels of policy support. The mediation analysis for prejudice found medium LOF showed a statistically significant indirect effect on policy support via avoidance/disgust (β=0.240, p<0.001), as did high LOF (β=0.483, p<0.001). Medium LOF exhibited a small but statistically significant indirect effect on policy support via condemnation (β=0.060, p<0.001); indirect effect for high LOF was not statistically significant. Last, medium LOF exhibited a small but statistically significant indirect effect on policy support via sympathy (β=0.090, p=.039); indirect effect for high LOF was not statistically significant. (See online supplement five and six for Figures)

Meta-inferences

There were 62 statements available for coding and analysis, and four themes were found. Quantitative data and the qualitative themes are merged and reported based on meta-inferences from both data sets.

Some comments outlined mechanisms of stigma providing insight into how social stigma operates beyond the descriptive statistics. Stereotypical traits that PWUD lack control, avoid responsibility and are unreliable were discussed. Respondents who endorsed PWUD as dangerous and had an unwillingness to work with PWUD believed that PWUD often engage in risky behaviour to obtain drugs. This suggested the behaviour of the PWUD was viewed as a potential threat of physical security to those around them, not character flaws or the type of drug being used.

> *"Reasons why a person may be inclined to make certain decisions for example agreement whether or not a person should not be employed in a job as they are addicted to opioids as it may be unsafe for them to work with individuals"* (Statement 63)

> *"Opioid addicts tend to be more dangerous in general not based on the effects of the drug (like amphetamines or cocaine) but the requirement to supply the addiction which often results in criminality / risk taking*." (Statement 68)

Comments to endorse housing discrimination appeared to be motivated by views regarding power and social status. One statement described that landlords were perceived to have more power and rights than PWUD.

> *"I strongly believe in the right for business owners and landlords to choose who can live in their premises and work for them…. I would hate to see anyone denied basic necessities like a job or home because of opioid use, but I would also hate to see any employers or landlords lose their freedom of choice to decide who lives in their house or works for them."* (Statement 51)

Several respondents disclosed being a health care service provider to PWUD. This provided insight into the mechanisms of familiarity in the mediation analysis (more LOF was mediated by lower stigma). This prior contact enhanced sympathy, and reduced negative character judgements:

> "*Opioid users should not be judged as often their lives have been difficult and lead them in that direction just like our own lives lead us in the direction, we are in."* (Statement 36)
>
> "*This is definitely a reason as to why I am more so understanding of individuals who may use opioids. If I took this survey before my placement year, perhaps my answers would have been different. Everyone is human and needs a chance at life* (Statement 44*)*

Last, some statements provided details for lack of support for the criminalization of opioid use. For example, those who disagreed with criminalization perceived the punishment did not fit the crime. Those who agreed to criminalization appeared to view it as behaviour modification:

> *"I have drug charges on my Criminal Record - I can't go to USA or Australia, yet I have never harmed anyone or committed a violent crime of any sort."* (Statement 74)
>
> "*They can easily become non-users. By a strict action on them might create a new category of criminals that they are not."* (Statement 77)
>
> *"I strongly favour a health approach however no one should be immune from prosecution as it can be a route to help & habits are often sustained through dealing."* (Statement 7).

Discussion

This study examined how stigma involving fixed beliefs (stereotypes), emotional reactions (prejudice), and intentions to treat PWUD unfairly (discrimination) predicted attitudes towards policies to reduce opioid drug-related deaths in Republic of Ireland and Northern Ireland. It showed how prejudice is a distinct feature of stigma that predicts policy support. Similar to others (Baker et al.,2019; Calabrese & Bell, 2019; Kennedy-Hendrick et al., 2017; McGinty et al., 2018; Wild et al., 2021), the first regression model showed how social stigma (stereotypes and discrimination) predicted policy support when controlling for other variables. However, social stigma ceased to explain variance in policy attitudes when prejudice was added to the model showing a negative emotional response (lack of sympathy, social acceptance, and understanding) towards PWUD is a stronger predictor. The open-ended questions further extended our knowledge of how perceived drug seeking behaviors can reinforce social stigma and prejudice. The statements also illustrated how prejudice can devalue PWUD based on power and social status.

For mediation effects medium and high levels of Levels of Familiarity (LOF) reduced social stigma and prejudice (avoidance/disgust) compared to low LOF, while medium LOF reduced condemnation and being unsympathetic towards PWUD, which increased levels of policy support. Wild and colleagues (2021) found exposure to the media had a small indirect effect on the public's levels of policy support through stigma. However, the current study outlines stigma as an important mediator to explain variation in policy support. The open-ended statements also provided insight into the mechanisms; prior contact appeared to inspire sympathy which reduced negative character judgments. These findings suggest that stigma reduction programs should aim to improve sympathy by 1) enhancing compassion 2) inspire social acceptance and 3) should educate and foster understanding of the social and environmental conditions that shape drug-related harms and the lived or living experience of PWUD. More importantly these campaigns should be informed by lived and living experience of PWUD and/or people with prior contact to help shift the social environmental conditions to gather support and implement policies (Livingston et al., 2020).

The final regression model demonstrated that lack of endorsing criminalization and punishing people who use opioids predicted more support. These findings support previous research done by Bryan and colleagues (2000) and opinion polls by Citywide (2016) which outlined respondents did not see PWUD as criminals. The latest Citizens' Assembly on Drug use in Ireland supports a health-led approach to reducing drug-related deaths including

recommendations for decriminalization of drug possession for personal use (Citizens' Assembly, 2023).The open-ended statements provided some evidence to show criminality beliefs about PWUD could have negative long-term consequences by creating more criminality. Some recent studies echo criminalization causes more stigma (Scher et al., 2023). Therefore, stigma programs should aim to reduce stereotyping especially where there are high drug-related deaths and where criminalization of drug use is embedded in drug policy.

Stakeholders working with PWUD may wish to design a combination of direct and indirect contact-based programs to reduce stigma. The content of stigma reduction programs should target negative emotions (prejudice), increase sympathy, and be aimed at the public and policy makers. Combining knowledge about policies and sympathetic messages has been found to increase public support for naloxone (Bachhuber et al., 2015; Sumnall et al., 2020) and would be advantageous to adopt worldwide as stigma is a global issue (Parker, 2012). The use of direct contact through personal narratives from people at risk of overdose, their families and carers would also help challenge negative judgements regarding PWUD. This type of contact informed messaging is supported in the literature (Livingston et al., 20212; Tostes, 2020; Vezzali et al., 2014). These narratives can also be implemented using multimodal campaigns e.g. animated videos (Sumnall et al., 2023) community murals (Miller et al., 2023), and social media (Bonnevie et al., 2022) to improve knowledge of PWUD and overdose; the use of photographs with accompanied narratives from PWUD has reduced stigma (Tippin et al., 2022). These types of campaigns will be advantageous in ROI and NI, the United Kingdom (Holland et al., 2022; Southwell et al., 2022), Eastern Europe (Uusküla et al., 2019) and within the United States (Finke et al., 2022; Irwin et al., 2016) where evidenced-based interventions (supervised injection sites and over-the-counter naloxone) have yet to be widely implemented. Lastly, the study showed how prejudice may operate to maintain the devalued social status of PWUD. Stigma programs should also target policy makers or key stakeholders who have the power over the health policies relevant to PWUD while advocating for changes in legislation and policy. This kind of adaptation may be advantageous in reducing structural stigma and ensure PWUD voices are included in provision and planning of care.

Strengths and Limitations

A key strength is the use of the Social Cognitive model of stigma (Corrigan et al., 2017) which allowed deeper understanding of how stigma works through stereotypes,

prejudice, and discrimination. This study also used Intergroup Contact Theory (Pettigrew & Tropp, 2006), using theory to assess how familiarity is related. The open-ended question provided an in-depth perspective regarding how stigma operates. The study used an opportunistic sample. This method is subject to selection bias (low to medium risk of bias) based on the respondents who were available. In addition, most respondents were educated to degree level or in employment, we have under-represented alternate views from others. In addition, the description of opioids may have not be inclusive of all drugs (e.g. morphine and codeine) which may have reduced participants accuracy in responding. The generalizability of this outcome may be relevant to contexts that have similar drug policies (e.g. lack of drug consumption rooms, no prescription free naloxone) such as in the UK and some European countries. Future research using the same policy and stigma measures would be needed to support this claim.

The results of the open-ended question only represented those willing to comment. The Level of Familiarity Questionnaire is commonly used to study contact and stigma processes, however, does not encompass all conditions necessary for reduction in negative attitudes (Allport, 1954; Pettigrew & Tropp, 2006; Dovindo et al., 2017). A measure focused on the type of relationship, the experience of that contact, frequency, and recency could provide more detail how prior contact is related stigma and policy support. In addition, the scale lacks other types of experiences such as contact based on drug related crime. We also acknowledge that policy change does not just rely on views or evidence, but has a moral dimension (Stevens, 2024).

Conclusion

The study identified public support of evidence-based interventions to reduce drug related deaths in ROI and NI such as supervised injection sites, laws protecting bystander at the scene of an overdose and providing naloxone over the counter, however prejudice can interfere with this support. Campaigns that inspire sympathy may help reduce stigma and gather public support for policies to reduce opioid drug-related deaths. Future research may also want to assess if stigma varies based on type of opioid related drugs (e.g. opioid medication). In addition, researchers may want to consider incorporating the Stigma of Addictions model that incorporates all three factors of stigma: stereotypes, prejudice, and discrimination (Corrigan et al., 2017) to identify which factors are the most important and adapt programs accordingly.

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Statements and Declarations

Ethics consideration

The authors declare that they have obtained ethics approval from an appropriately constituted ethics committee/institutional review board where the research entailed animal or human participation. School of Psychology (**Name of University**).

Consent to participate

All participants provided written consent to participate in this study.

Consent for publication

Consent for publication was obtained through writing, and the confirmation is held by the authors themselves.

Declaration of Competing Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Data availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Current affiliation notes

The first authors affiliation has changed to **(Name of new affiliation**)

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