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Applying behavioural science to issues of public health in South Africa: The case for social norms intervention

In the effort to address behavioural risk factors – which contribute significantly to the global burden of disease – there is a growing movement in public health towards the use of interventions informed by behavioural science. These interventions have the benefit of being amenable to testing in randomised controlled trials, are cost-effective and, when scaled up, can have significant public health benefits. A subset of these interventions attempts to change behaviour by shifting social norms perception (what I *think* everyone else does and thinks). We surveyed the work on social norms intervention and considered its applicability to issues of public health in South Africa. Social norms interventions have widespread and significant potential to address issues of public health in South Africa; policymakers should look to these interventions as cost-effective tools to address key issues. More broadly, we advocate for an expansion of the use of behavioural science in developing public policy in South Africa.

Significance:
- The application of behavioural science to issues of public health will contribute to evidence-based policy efforts in South Africa.

Introduction

South Africa faces a number of significant public health crises. While much has been done over the past decades to address the quadruple disease burden, we have, nonetheless, witnessed a rise in non-communicable diseases (responsible for 39% of deaths in 2010) and a failure to curb HIV/AIDS infection rates (35% of deaths in 2010).[1-3] Given that behavioural risk factors contribute significantly to the global disease burden, there is a growing movement towards the application of evidence-based behavioural science interventions to issues of public health; public health in South Africa would greatly benefit from joining this movement.[4,5] These interventions have the benefit of being amenable to testing in randomised controlled trials, are relatively cheap and cost-effective, and even when they yield only small effects they can have significant positive impacts on public health when scaled up.[4,6] A subset of these interventions focuses on changing behaviour through shifting social norms perception. In this paper, we focus on social norms as an important site for behavioural change interventions, and consider its applicability to issues of public health in South Africa.

Social norms

Social norms are 'shared beliefs within a social unit about the appropriate ways to think, feel, and behave in a given context'[7(p.240)]. By 'social unit' we mean an 'in-group' – a group of people who identify with one another within relevant contexts, for instance, South Africans at the Rugby World Cup, members of the ANC at a party rally, Kaizer Chiefs supporters at a soccer match.

It is important to distinguish two different types of norms: descriptive and injunctive.[8-10] A descriptive norm refers to the prevalence of a behaviour in a social in-group (for example, the percentage of people in a workplace who get a flu vaccine) while an injunctive norm refers to what behaviours in-group members think others within a social in-group ought to do (for example, the percentage of people in a workplace who think others ought to get flu vaccines).[9] A further distinction is made between actual and perceived norms. Actual norms refer to the accurate rates of prevalence (descriptive) or approval/disapproval (injunctive) of a particular behaviour. Perceived norms are the common (mis)perceptions of the prevalence (what I think other in-group members do) and approval/disapproval (what I think other in-group members approve/disapprove of) rates held by in-group members. The norms that drive behaviour are often the *misperceived* descriptive and injunctive norms, which may overestimate the prevalence and approval of risk behaviours and underestimate that of protective behaviours within social in-groups.[8,11,12] The misperception of norms is common because we are often unable to base our understandings of phenomena on accurate data – rather, we look to our own behaviour or employ mental shortcuts (for example, by looking at what salient members of our in-group appear to be doing) to determine norms.[12,13]

Social norms perception interventions

Norms perceptions can be an important site for shifting behaviour – unlike attitudes, norms perception has been shown to govern behaviour significantly and to be dynamic and malleable.[12] The cost-effectiveness of norms perception interventions means that they can function as a practicable tool to help policymakers and practitioners shift behaviour in a more healthful direction.[14]

Sources of norms information

Three primary sources of norms perception information, which can be targeted by interventions, have been identified[12]:

1. Individual group members' behaviours act as an important source of norms information within a social in-group. This influence is not spread equally among group members; rather, some group members who are widely known or seen as 'clique leaders' in particular contexts (referred to in the literature as 'social referents') hold an exaggerated influence. Social referents are seen by their fellow in-group members as prototypical and, in turn, they are looked to for in-group appropriate behaviour.[12] Interventions which attempt to shift norms perception by addressing this source of norms information do so by shifting the views and behaviours of key social referents. One such intervention was run as a randomised controlled trial in 56 schools to reduce bullying behaviour. Social referents were identified through a social network analysis and asked to take part in school-wide anti-bullying campaigns. Compared with control schools in which no intervention was administered, intervention schools saw a 30% reduction in bullying.[15]

2. Summaries of actual norms are a common source of norms information. This information usually comes in the form of accurate statistics on the prevalence and support rates for a particular behaviour within a social in-group. Once collected and disseminated, this information is used to highlight the actual descriptive and injunctive norms which are present in a social in-group – thereby, in theory, correcting misperceptions and shifting behaviour. In the UK, the efficacy of disseminating actual norms summaries to decrease unnecessary prescription of antibiotics among general practitioners was tested in a randomised controlled trial. The top 20% of prescribers within a geographical area were randomly assigned to two groups. One group was sent letters notifying them that they were prescribing antibiotics at a higher rate than 80% of other practitioners in the area (i.e. that they were deviating from the social norm), while the other group received no communication. The intervention led to a significant reduction in antibiotic prescriptions in the intervention group (3.3%) when compared with the control group.[16]

3. Institutional signals are a source of norms information. These signals come from organisational, educational or governmental institutions which influence a reference group and their social activities.[12] When considered legitimate, these institutions act as a source of normative information both directly (e.g. through laws which proscribe and prescribe behaviours) and indirectly (e.g. when individuals observe normative changes as a result of institutional signals and in turn adapt their behaviour). However, there is at present too little empirical evidence to conclude that changes to institutional signals can cause significant shifts in behaviour.[12]

Social norms misperception approach

A great deal of research has examined how norms perception (source 2 above) can be applied to a variety of risk and protective behaviours,[11,17,18] with a particular focus on one approach, herein termed the 'social norms misperception approach' (SNMA). The assumptions of this approach are simple: overestimations of anti-social/risky descriptive and injunctive norms and underestimations of pro-social/protective descriptive and injunctive norms will increase and decrease such behaviours, respectively.[11] Because of cognitive biases and mental shortcuts, we have a tendency to make these over- and underestimations (misperceptions) of group members' behaviours and attitudes. In theory, interventions which aim to disseminate accurate descriptive and injunctive norms (through a variety of strategies such as social norms marketing and computerised feedback) will have the effect of correcting such misperceptions and in turn effect important behavioural change.[18]

These theoretical assumptions have found some support in a number of empirical studies which have applied different permutations of the simple intervention formula to an array of behaviours. For instance, small-scale research has found the SNMA to be efficacious in reducing gender-based and sexual violence[19-21], lowering bullying behaviour[22], and decreasing rates of driving under the influence of alcohol[23]. Larger scale studies have found the SNMA approach to be effective in encouraging energy conservation and other pro-environmental behaviour[8,24,25], increasing voter turnout[26], and increasing tax compliance rates[27]. Moreover, several studies have also found the SNMA to be successful in lowering alcohol and substance use among school and university students[18,28-30], although some suggest that the effect of social norms interventions may be only small[31].

The field, of course, is not uniformly replete with success stories. Norms interventions must be constructed carefully, and those that have failed may have done so because they used only descriptive norms.[8] One study, for instance, disseminated individual norms and compared them to the neighbourhood norm. The study found that while the dissemination of *actual* descriptive norms of average neighbourhood household energy consumption compared to individual norms had the positive effect of reducing the energy consumption of those who exceeded the norm, it also was associated with an increase in the energy consumption of those who were below the norm (the so-called 'boomerang effect').[8] In other words, neither the high nor the low usage consumers wanted to deviate from the norm. However, by adding an injunctive norm to their descriptive norm feedback, they were able to ameliorate the boomerang effect.[8] A corollary of this finding is the insight that social campaigns which stress the prevalence of the negative behaviours they wish to alter (e.g. 'This is a high crime zone') have the potential to unintentionally drive up these behaviours. Cialdini and colleagues found park signs which indicate that '[m]any past visitors have removed the petrified wood from the park, changing the state of the Petrified Forest' resulted in more theft over signs which stated that most people do not steal or asked visitors to please refrain from stealing.[32(p.8)] This provides an important guideline for future research and also has practical implications for public campaigns which stress the prevalence of negative behaviours.[12]

Another important consideration is that of the salience of an in-group. Social identity theorising predicts that our behaviour is significantly influenced by the social identity which is presently salient and meaningful to us.[33,34] The level of social identification moderates the association between descriptive and injunctive norms and behaviour – that is to say norms of more proximal and salient groups have a greater influence on behaviour than those of distal groups.[30,35-37] It is therefore critical to determine the relevant social identity and members' level of identification with that identity when conducting social norms research and developing interventions.[7,12]

A further consideration for using the SNMA pertains to the baseline actual prevalence or approval rates for a particular behaviour. Because the approach relies on correcting the misperceptions of behaviours that are perceived as more or less prevalent and approved than they actually are, interventions are limited to behaviours which already fit these patterns. For example, if a majority of people within a social in-group do not use condoms and disapprove of others using condoms, then disseminating the actual descriptive or injunctive norms – even if misperceptions exists – would not be an effective way of promoting condom use. In that sense, the SNMA is limited to promoting behaviour change only in instances in which the actual prevalence and approval rates are in line with desired behavioural outcomes. Tankard and Paluck[12] suggest that one way around this limitation would be to emphasise the positive direction in which a norm is shifting (for example, 'more and more South Africans are using condoms').

Social norms in the South African context

In South Africa, academics, non-governmental organisations and government ministers often evoke the idea of shifting social norms to tackle persistent social issues. These recommendations are made in relation to a variety of societal issues ranging from reducing rates of smoking[38] and dangerous driving[39], to HIV-risk behaviour among low-income communities[40] and violence against women and children[41,42]. While these suggestions abound, relatively little thought has been given to the means

of achieving the prescribed norms change. Moreover, there is a dearth of rigorously evaluated evidence-based attempts to shift norms in the South African context. Therefore there is immense potential for social norms research to test its applicability to key social issues in South Africa.

Some of these potential applications, and their limitations, will be considered below. To quantify the most important behaviours which require focused intervention, we looked to the risk factors which are associated with the highest percentage of disability-adjusted life years. We looked at three of the top five risk factors – unsafe sex, interpersonal violence and tobacco smoking – which collectively are risk factors for 43.9% of the total disability-adjusted life years in South Africa (the other two risk factors are high body mass index and alcohol harm).[43] We deal with each of these in turn, focusing on previous social norms research, as well as local data which could be useful for future interventions.

Suggestions for social norms interventions in South Africa

Unsafe sex

We examined three risky sexual behaviours and their amenability to social norms intervention: multiple sexual partners, lack of HIV-testing and non-use of condoms. A study conducted in two low-income areas in South Africa found that people who had been tested for HIV were more likely to agree or strongly agree with the statement 'Most people have been tested for HIV'[44(p.621)] than those who had not been tested. Moreover, a study conducted in Gugulethu township found that men significantly overestimate the prevalence of and support for multiple sexual partners and underestimate that of condom use in their community. The authors concluded that these findings 'provide support for greater attention to perceived norms and their potential for influencing behaviour in the development of individual and social-structural interventions to prevent HIV transmission'[45(p.38)]. Results from the South African National HIV Prevalence, Incidence and Behaviour Study[46] also lend support to potential social norms interventions. The study found that most (87.4%) South Africans (aged 15 and over) do not report having multiple sexual partners in the past 12 month and that a majority (65.6%) have been tested for HIV.[46] A potential norms intervention would focus on disseminating the message – through norms marketing campaigns – that a significant majority of South Africans do not engage in this risky sexual practice and that most South Africans do get tested. These data are disaggregated by province (and could be further disaggregated by enumeration area), locality type, sex and age group – which could be used in future interventions by tapping into salient social identities and disseminating the actual norms of this type of risky sexual behaviour (for example, a billboard campaign: 'Most men in Polokwane have been tested for HIV and know their status. #MostOfUs'). Injunctive norms data of these risky sexual behaviours would enhance future campaigns, and should be explored in future studies.

However, on the basis of present data, condom use would not be directly amenable to a SNMA intervention – a minority of sexually active South Africans report using condoms at last sex with their most recent sexual partner.[46] Future surveys should include measures of injunctive norms of condom use among South Africans to assess whether it might be a suitable focus of SNMA intervention. Another avenue for intervention would be to use the social network approach to determine social referents in particularly at-risk communities to encourage new norms around condom use. Nonetheless, this finding points to the abovementioned practical limitations of the SNMA – that is, these interventions are restricted to risky behaviours which are not pervasive and protective behaviours which are pervasive.

Interpersonal violence

Bullying behaviour

One form of interpersonal violence which has seen significant reduction through norms intervention is school bullying. Research suggests that when it comes to problem-solving strategies, students often overestimate the normative support for aggression and underestimate normative support for non-violence.[47] As mentioned above, a randomised controlled trial conducted in 56 schools in the USA used a social network analysis to identify social referents and then asked them to join an anti-bullying campaign. The intervention reduced bullying behaviour by 30% over a year, compared with control schools.[12]

Bullying is a serious problem in South Africa – with 19.7% of 15–17 year olds reporting having been bullied in a nationally representative study.[48] Moreover, school bullying may be linked to negative academic outcomes[49], internalising symptoms and conduct problems in victims[50]. Given the success of the US intervention in reducing rates of bullying, future research could modify the intervention to suit a South African context. Once contextualised, the intervention could be tested through a randomised controlled trial in South African schools. If positive results are found, there would be a strong case for scaling up the intervention. Such a process would contribute significantly to evidence-based policy efforts in South Africa.

Corporal punishment

Parental corporal punishment is a form of disciplinary behaviour which is an important issue to address for the protection of child rights, and also because it may be a risk factor for harsher forms of abuse.[51,52] While a nationally representative survey found that 57% of South African parents report using corporal punishment on their children[53] (descriptive norm), 72% of parents agreed with the statement '[w]hen children do wrong, it is always better to talk to them about it than give them a smack' (p. 18; injunctive norm). This finding is potentially useful for future interventions. We are currently working on a research project in two Early Childhood Development Centres in historically disadvantaged communities in the Western Cape to examine the social norms of parenting disciplinary practices. If significant misperceptions exist, we will be in a good position to trial the SNMA to parenting intervention.

Tobacco smoking

Tobacco smoking is a risk factor accounting for 4% of the total disability-adjusted life years and 8.5% of mortality in South Africa.[43] While relatively few studies have examined the efficacy of the SNMA on tobacco smoking, there are promising signs: the few studies that have been conducted in the USA have shown significant reductions in smoking among university students and youth smoking initiation.[54,55] Results from the South African National Health and Nutrition Examination Survey are clear: most South Africans do not smoke.[56] This nationally representative survey found that only 16.8% of South Africans (over 15 years old) smoke cigarettes.[56] A potential anti-smoking campaign could therefore stress that the vast majority (83.2%) of South Africans do not smoke. Moreover, the survey data are disaggregated by province (and potentially enumeration area), age and sex, so – again – it is possible to tailor the messages to particularly salient social identities (e.g. 'Most Durbanites don't smoke'). Future research should test the efficacy of such a campaign in the South African context, and future surveys should also include measures of injunctive norms of smoking to enhance potential interventions.

Insights from past research

We need to emphasise here that the SNMA, and social norms interventions in general, are not a silver bullet or cure-all – public health issues are complex and dealing with them requires multipronged and multisectoral efforts. Social norms approaches are but one way in which behavioural science can contribute to these efforts – we have collected some of the insights from recent research on norms interventions to guide future practice. First, as described above, SNMA interventions are most appropriate for behaviours for which misperception exists but the baseline actual prevalence or approval rates are not already high. Second, a strong sense of identification with the reference group used and the source of the norms information will increase the likelihood of a successful intervention.[12] Third, descriptive and injunctive norms are most effective in changing behaviour when they appeal to a collective self (e.g. 'Most of us don't smoke cigarettes', 'Let's reduce lung cancer together').[57] Finally, because of the many problems South Africa faces – from disease burden to water scarcity – that may be amenable to an SNMA approach, it is a fruitful arena in which to study these approaches.

Using South Africa as a study site might also provide opportunities to develop SNMA theory. For instance, questions regarding the level of social identification which is necessary to affect behaviour change could be tested in resource-poor settings. Moreover, and perhaps more importantly, SNMA research in South Africa could help answer important, and topical, questions about the replicability of SNMA findings from the developed world.

Summary

Evidence-based behavioural science interventions are increasingly becoming an important tool to address public health issues in developed countries. Given the scarcity of resources and large-scale social issues, this cost-effective form of behavioural change has perhaps even more utility in developing countries such as South Africa. Social norms interventions are one such tool which could affect important health-related behavioural change. We have argued that there is indeed significant potential for such an approach to be tested and adopted locally. To begin harnessing this potential, piloting of social norms interventions which address a variety of unhealthy and dangerous behaviours should commence, and nationally representative surveys should start including measures of injunctive norms. More broadly, here we attempt to advocate for an expansion of the use of behavioural science in developing public policy in South Africa. Future behavioural science research should be policy-minded and apply its methods to societal issues with a focus on scalability, as well as make use of the unique aspects of South African society to develop and build SNMA theory.

Authors' contributions

All authors contributed to the writing of the manuscript.

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