Author Version of Paper accepted by Health Education Journal, 15 June 2017

A social norms approach to changing school children's perceptions of tobacco usage

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Abstract

Purpose – Over 200,000 young people in the UK embark on a smoking career annually, thus continued effort is required to understand the types of interventions that are most effective in changing perceptions about smoking amongst teenagers. Several authors have proposed the use of Social Norms programmes, where correcting misconceptions of what is considered normal behaviour lead to improved behaviours. There are a limited number of studies showing the effectiveness of such programmes for changing teenagers' perception of smoking habits, and hence this paper reports on the results from one of the largest Social Norms programmes that used a variety of interventions aimed at improving teenagers' perceptions of smoking.

Design/methodology/approach - A range of interventions was adopted for 57 programmes in Year 9 students, ranging from more passive interventions such as posters and banners to more active interventions such as student apps and enterprise days. Each programme consisted of a baseline survey followed by interventions and a repeat survey to calculate changes in perception. A clustering algorithm was also used to reveal the impact of combinations of interventions.

Findings –The study reveals three main findings: (i) the use of social norms is an effective means of changing perceptions (ii) the level of interventions and change in perceptions are positively correlated and (iii) that the most effective combinations of interventions include the use of interactive feedback assemblies, enterprise days, parent and student apps and newsletters to parents.

Originality/value – The paper presents results from one of the largest social norm programmes aimed at improving young people's perceptions and is the first to use clustering methods to reveal the impact of combinations of intervention.

Keywords: smoking, social norms, children, young people, schools

Introduction and Background

The last decade has seen a significant change in attitudes towards smoking, largely as a result of the growing realisation of its negative impact on an individual's health and society (Fry et al., 2008; Amos et al., 2009, ASH, 2016). This realisation led to governments adopting a more active approach, including introducing regulation and legislation (DH, 2011). There is good evidence that this active approach has contributed to a decline in the smoking rates among adults and young people (Amos et al., 2009; Croghan and Bromley, 2015; Milton, 2008 and NICE, 2010).

This is an encouraging trend. However, in the UK, over 200,000 young people still embark on a smoking career every year, over 9 million adults smoke (Health and Social Care Information Centre, 2013; Hopkinson, 2013) and, according to Action on Smoking and Health (ASH 2016), 96000 people die from disease caused by smoking every year. Thus, the need to reduce smoking among young people remains a priority, especially given the significant body of evidence that a vast majority of adult smokers establish their pattern of smoking in their adolescence (Jackson et al., 2012 and Office for National Statistics, 2013). Various studies also show that the earlier such habits are formed, the greater the risks to health and the harder it is to stop smoking (Fry et al. 2008; Royal College of Physicians, 2010 Croghan and Bromley 2015). The route young people follow to becoming what Chassin et al. (2000) describe as 'stable smokers' is varied. This habit can be established in a few weeks or may take several years (Amos et al., 2009), and just one cigarette increases the risk of young people becoming addicted in later adolescence compared to those who have never experimented (Jackson and Dickinson, 2004 and Fidler et al., 2006).

The route and reasons why young people become smokers is complicated and includes a range of interrelated factors including self-efficacy (Ogden and Nicoll, 1997), self-esteem (Goddard, 1990; Pfau and Van Bockern, 1994), socio-demographic and socio-economic factors, gender and a need to look 'cool' (Owen and Bolling, 1995; Conner et al., 2006; and Plumridge et al., 2002; HSCIC 2014). This complex picture, leads to the conclusion that there is a need for a fresh approach. This view is supported by writers such as Crogan and Bromley (2015) who highlight the fact that there are only a handful of programmes worldwide that can evidence any impact on young people's smoking behaviour. Crogan and Bromley (2015) go further by stating that the majority of these programmes are off putting and lack relevance. Scholly et al. (2005, p160) suggest that the majority of programmes adopt an approach that aims to "scare the health into people". They suggest that programmes that focus on negative behaviours actually reinforce the perception that people are engaging in risky behaviours, which in turn encourages people to escalate their behaviour. Scholly et al. (2005) therefore advocate approaches that reinforce low-risk practices.

There is a growing body of evidence that highlights the importance of social norms in the development of our behaviour (Dohnke et al., 2011; Echeverria et al., 2015; Elsey et al., 2015; Haines & Spear, 1996 and Scholly et al., 2005). Social Norms Theory (SNT) states that how we perceive the behaviour of others, which is often incorrect, influences how we behave (Berkowitz 2004 and Perkins 2003). Lapinski and Rimal (2005) explain that SNT relates to what they describe as 'descriptive norms', which are beliefs about what is actually done and 'injunctive norms' that relate to what ought to be done. The difference between actual and perceived behaviour is described as 'pluralistic ignorance', where individuals overestimate the risky behaviour of others,

resulting in their own risky behaviour, and leading to a false consensus (Berkowitz, 2004; Brown et al. 2010; McAlaney et al., 2011; Perkins 2003; Miller and Prentice, 2016).

Approaches that draw on this theory address this 'pluralistic ignorance' through the provision of positive health messages that depict the true norm (Scholly et al., 2005). SNT gained popularity during the late 1980's and 90's through the work of Perkins and Berkowitz (Perkins and Berkowitz, 1986; Berkowitz, 1997; Perkins, 1995, 1997; Perkins et al., 1999 and Perkins and Wechsler, 1996). The vast majority of this work focused on college students' use of alcohol in the USA. Its application has since been extended to other behaviours such as sexual health (Scholly et al., 2005) and smoking (Elsey et al., 2015 and Echeverria et al., 2015).

In summary, there is evidence showing that SNT can have an impact on changing the perception and behaviour of young people, including with regards to alcohol consumption.

There is also evidence that some interventions can have more impact than others, and that the rapid uptake of smartphones offers potential for increasing the impact of interventions in hard to reach socio-economic groups (Moller et al., 2017). For example, web-based feedback has been shown to be more successful in positively changing behaviour in alcohol consumption compared to other intervention programmes such as group or individual face-to-face feedback (Cochrane 2009).

Despite this growing body of evidence, there is little work that explores the effectiveness of different SNT strategies and interventions on young people's engagement with smoking. Hence, this paper presents the results from one of the largest social norms programmes in the UK that aims to reduce perceptions of smoking among young children. Section 2 presents the methodology; Section 3 presents the data analysis and results; Section 4 presents a discussion and Section 5 concludes the paper.

Methodology and Interventions

Given the above context, the objectives of this study are to evaluate the extent to which a social norms programme can change perceptions of smoking in young people and to explore the effectiveness of combinations of interventions. The specific programme we consider is the RUDifferent? Programme that has been developed by Social Sense, a social marketing agency which was commissioned by Local Authorities to deliver positive and measurable outcomes to children, young people and their families (RUDifferent, 2017). A typical programme included an initial baseline survey followed by interventions and a repeat survey as described below. Each programme consisted of a combination of one or more interventions. These interventions can be grouped into two categories:

- Passive interventions that aimed to promote awareness and positive messages from the survey and include: bespoke message posters, QR code posters, digital signage, screen savers, roll-up banners, railing banners, website picture links and newsletters to parents.
- Active interventions that aimed to be more engaging and include: photography of students, a student app, a parent's app, interactive feedback assemblies, full enterprise days and developed enterprise campaigns. For example, the interactive feedback assemblies involved the use of voting handsets by students in assemblies; the mobile apps' quiz invited parents/carers/students to challenge their own previously held misperceptions; and enterprise days involved group work in which students developed a campaign to promote one of the key messages.

In total, 57 Schools used the programme during 2013-2015. Students were informed that the survey was anonymous and that they had the right to reject the invitation to be involved. Schools also had the option of seeking parental permission for students to take part, usually by use of an 'opt-out' letter.[1]

Every school received a baseline survey consisting of 50 questions exploring young people's actual behaviour and their perception of other people's habits. One of these questions was a matrix style question: 'How often do you think students in each of the groups smoke cigarettes?', where the potential response options are: 'never', 'once a month', 'one a week', 'twice a week' and 'daily' for 'yourself', 'friends', 'other students in your year', 'boys in your year', 'girls in your year'. The smoking behaviour figure wastaken from this question i.e. for 'yourself'. For the perception of others, a more direct question was asked: 'What percentage of students in your year group do you think don't smoke at all? To answer this, respondents had to move a 'slider' to the desired percentage. By default, the slider was positioned in the middle at 50% but must be clicked and moved to register a response. This aimed to encourage participants to consider their response more fully, thus providing a more accurate figure.

The results of the baseline survey were shared with the school. The range of interventions agreed with a school were based on several factors including timing, budget and baseline results. Following the interventions phase, all schools repeated the survey. The following section presents an analysis of the results.

Results and Analysis

[1] The survey was designed by Social Sense prior to the involvement of the academic partner, so there was no formal approval via an ethics panel at the University.

To assess whether the interventions had an impact, the change in perception and a measure reflecting the combined level of interventions were computed and then plotted to see if there was a positive trend. The measure used to assess the change in perception was simply the relative difference in perceptions between the pre and post intervention values:

$$Change = \left(\frac{Perception_{New} - Perception_{Old}}{Perception_{Old}}\right) * 100 \qquad \text{eq. (1)}$$

A broad indication of the impact of the interventions was obtained from the average change together with the 95% confidence interval:

Average Change = 2.74 ± 2.28

Hence, although we can be confident that the interventions had an effect on perceptions, the level of impact varied from 0.46% to 5.02% depending on the combination of interventions used. A reasonable hypothesis, that we explore below, is that the level of impact increased as we increased the level of interventions.

As summarised in Section 2, different types of intervention were used, varying from passive interventions such as posters to more engaging (or active) interventions such as interactive assemblies and enterprise days. To reflect this, the measure used to compute the total level of interventions takes the weighted form:

$$Intervention\ Level = \sum_{k=1}^{n} w_k . i_k \qquad \text{eq. (2)}$$

Where w_k is the weight associated with the k^{th} intervention and i_k is either 0 or 1 depending on whether the k^{th} intervention was used. In assessing the weight, it seems reasonable to assume that active interventions should carry a greater weight than passive interventions. Hence, for simplicity we adopted a weight of 1 for passive interventions and a weight of 2 for active

interventions. Figure 1 plots the level of intervention against the difference in perception, showing that there was a positive trend.

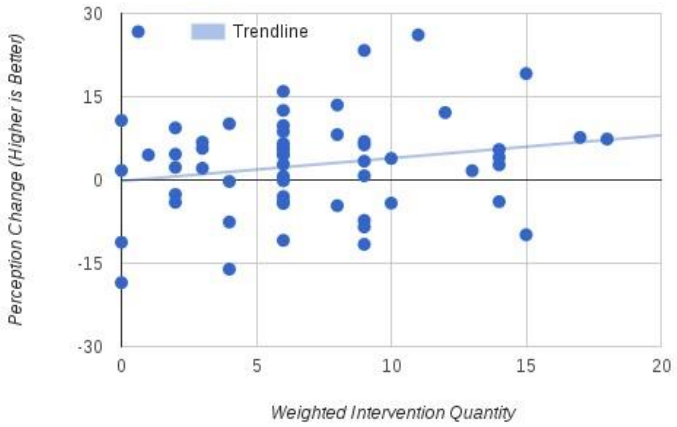

Figure 1: Plot shows the relationship between the level of intervention and its impact

To examine if there was a pattern in terms of low, medium and high levels of interventions and their resulting impact, we needed to quantify these terms. Although different definitions were possible, it is reasonable to suggest that one active intervention or two passive interventions could be classed as low (weighted score < 3), and interventions totalling eight points or more could be classed as high (weighted score ≥8), with the rest considered medium level intervention (3 < weighted score < 8).

Given these definitions, we computed the average difference in perception for each group, which are presented in Table 1. These results show that there was a positive correlation between the level of intervention and improvement in perceptions. Overall, the results show that there were step improvements in perceptions as one proceeded from low to high levels of intervention.

Intervention Level	Average (%)	Instances
Low	-0.31	10
Medium	2.44	23
High	4.29	24

Table 1. Average perception change for predicted low, medium and high-impact programmes

As a final exercise, we used various data mining methods, including decision tree induction, association rule mining and clustering methods to see if they could reveal interesting patterns. Of these, the use of clustering produced the most interesting results for visualising patterns. The method of clustering used is known as Self Organising Maps (SOMs), which are a type of neural networks first developed by Kohonen (1990, 2001) and can result in mapping data onto a two-dimensional space of nodes that are typically organised in a rectangular or hexagonal grid. The specific version of SOMs that we used is a variation known as X-Y fused maps that clusters the features X and relates them to clusters that represent the dependent variable Y (Wehrens, 2011). Given the aim of this study, the interventions corresponded naturally to the features X and the change in perception corresponds to the dependent variable Y.

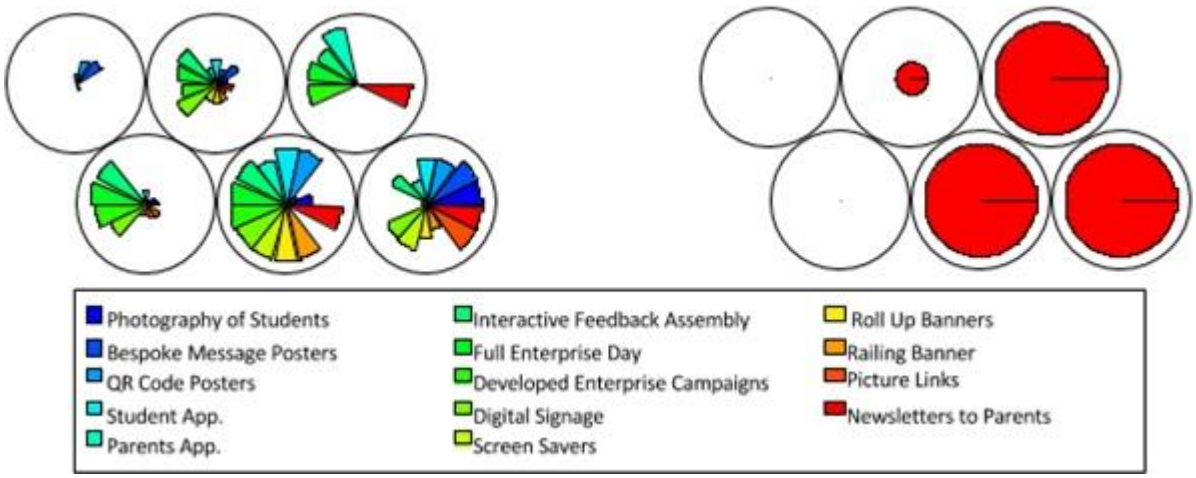

Figure 2: Clusters showing the impact of combinations of interventions on perceptions

Figure 2 presents the resulting clusters in a visual form, with the clusters on the left showing the characteristics (X) and the clusters on the right showing the level of impact made (Y). Thus the triangle of three clusters on the right (one on the top row and two on the bottom) show the combination of characteristics leading to the greatest improvement in perception, while the

triangle of clusters on the left show minimal benefits. In all three high-impact clusters, there was presence of Interactive Feedback Assemblies as well as parent-focused activities. The cluster on the bottom right also highlights the importance of bespoke message posters, photography of students, picture links and newsletters to parents. Contrasting the second and third clusters in the bottom row with the low impact clusters reveals the importance of a healthy balance of activities. The first cluster in the bottom row, which consists mainly of enterprise activities, does not lead to much impact, while the third cluster on the top row, which includes a combination of enterprise activities as well as parent engagement (via an App and newsletter) leads to much greater impact on perceptions.

Discussion

The primary purpose of this study was to explore the impact of a social norms programme on the smoking habits of young people through a range of interventions. The results from this study support those of Echeverria et al. (2015) and Elsey et al. (2015) in that there is a measurable misperception between young people's beliefs of the number of smokers in their peer group against the actual number of young people who identify themselves as smokers. It is also consistent with the findings of other studies that explore the impact of social norms on the perceptions of young people on others' engagement with risky behaviours. Scholly et al. (2005) highlights a similar disparity in perceptions against reality in respect of sexual behaviour and Lightowlers et al. (2009) concludes that young people significantly overestimate their peers' consumption of alcohol compared to their own.

There is a growing body of evidence that supports the view that the presence of misperceptions leads to an increased risk in behavioural uptake (Berkowitz 2004; Perkins 2003). Having already

established that interventions can have an impact on addressing these misperceptions, a key objective of this study was to establish whether it is the quantity or 'ownership' of interventions - e.g. whether the message was delivered peer to peer or by adults - that has the greatest impact. The notion of achieving impact through more active youth led participation in terms of message formulation and delivery (e.g. Enterprise Days) resonates with the work of Banerjee and Greene (2007) and their study of two different interventions on young people's intention to smoke. Their study used two intervention groups: the first included participants who discussed and analysed cigarette and anti-smoking ads and the second group analysed and then created their own anti-smoking ads. The analysis and production workshop was generally the more successful. Our final objective was to analyse the effectiveness of the intervention activities in combination, and our use clustering revealed the benefits of combinations that involve parents, and interactive activities such as enterprise sessions and student apps. These findings are consistent with a recent parent perception campaign in Halton (Alcohol Education Trust, 2015) and programmes such as ASSIST that aim to prevent uptake of smoking (DECIPHer, 2017). Bewick et al. (2008) and Moreira et al. (2009) also reported similar findings with regards to reducing alcohol misuse in that Web feedback was the most successful intervention. This is possibly due to the continuing growth of home internet access as well as the smartphone overtaking the laptop as the most widely owned internet-enabled device (Ofcom, 2015).

Limitations

There is some evidence to support predictive modelling as a viable option for social ROI, however there is clearly further research required. Looking at the dataset used in this study, it's clear that there were some limitations. The RUDifferent? programme was not formally designed

with ‘control’ schools in mind, therefore we were unable to reliably measure the impact of schools receiving no interventions. However, a pure ‘control’ sample is near impossible to achieve in such studies due to the other messages young people receive at schools, via social media and others offering varied approaches. There is always exposure to messages surrounding risk taking behaviour.

Future research

For future studies, Social Sense is looking at increasing the ‘control’ sample by having more schools take part in the baseline and repeat surveys only. Social Sense will also study the relationship between reported and intended behaviour and aim to develop a predictive model for perceptions and their impact on behaviours.

Conclusion

From past evidence, we can clearly see that misperceptions exist within young people. They also demonstrate that it is possible to evidence change in perceptions through the presence of social norms interventions. Where this study begins to break new ground is in the almost predictable recording of improvements in perception change based on combined quantity and weighting of interventions. The results show a correlation of positive perception change with higher intervention scores and the results from clustering reveal the combination of interventions that are most effective. The characteristics most prominent in the effective clusters include the use of interactive feedback assemblies, bespoke posters, enterprise days, parent and student apps and newsletters to parents. This implies that involving parents in the intervention process is facilitating conversation with their children and is making a difference. Thus, adoption of social norms programmes that

involve the combinations indicated above is more likely to have a significant impact on reducing uptake of smoking.

In conclusion, the results from this study show that a social norms programme can make a positive impact and that combinations of interventions that include engaging parents can result in greater impact on changing perceptions.

6. Acknowledgements

The authors are grateful to Innovation UK for supporting this study as part of a Knowledge Transfer Partnership (09806) between the University of Salford and Social Sense Ltd.

References

Alcohol Education Trust. (2015), "Report on the parental engagement through schools in Halton", available at www.alcoholeducationtrust.org/report-on-the-parental-engagement-through-schools-in-halton (accessed 3 June 2016).

Amos, A., Hastings, G., Angus, K., Bostock, Y. and Fidler, J. (2009), "A review of young people and smoking in england". Public Health Consortium, available at www.phrc.Ishtm.ac.uk (accessed 3 June 2016).

ASH Website. (2016), "Smoking statistics, Action on smoking and health", available at **www.abdn.ac.uk/staffnet/documents/Smoking_fact_sheet.pdf,** (accessed 3 June 2016).

Banerjee, S.C., Greene, K. (2007), "Anti-smoking initiatives: examining effects of inoculation based media literacy interventions on smoking-related attitude, norm, and behavioral intention", *Health Communication* **22**:37-48.

Berkowitz, A. D. (1997), "From reactive to proactive prevention: promoting an ecology of health on campus. substance abuse on campus", in *Substance Abuse on Campus: A Handbook for College and University Personnel Rivers*. P. C. and Shore, E. R. (Eds.). Greenwood Press: Westport, CN;119-139.

Berkowitz, A. D. (2004), "The social norms approach: theory, research and annotated bibliography", available at www.alanberkowitz.com/articles/social.norms.pdf (accessed 3 June 2016).

Bewick, B.M., Trusler, K., Mulhern, B., Barkham, M., Hill, A.J. (2008), "The feasibility and effectiveness of a web-based personalised feedback and social norms alcohol intervention in UK university students: A randomised control trial", *Addictive Behaviors* **33**:1192-1198.

Brown, A., Moodie, C., Hastings, G., MacKintosh, A. M., Hassan, L. and Thrasher, J. (2010), "The association of normative perceptions with adolescent smoking intentions", *Journal of Adolescence* **33**(5):340-357.

Chassin, L., Presson, C. C., Pitts, S. C. and Sherman, S. J. (2000), "The natural history of cigarette smoking from adolescence to adulthood in a midwestern community sample: multiple trajectories and their psychosocial correlation", *Health Psychology* **19**(3): 223-231

Coghan. E and Bromley. K. (2015), "Delivering young people-friendly smoking cessation", *British Journal of School Nursing* **8**(9):431-433.

Conrad, K. M., Flay, B. R. and Hill, D. (1992), "Why children start smoking cigarettes: predictors of onset", *British Journal of Addiction* **87**:1771-1724.

Conner, M., Sandberg, T., McMillan, B. and Higgins, A. (2006), "Role of anticipated regret in adolescent smoking initiation", *British Journal of Health Psychology* **11**:85-101.

Department of Health. (2011), "Healthy lives, healthy people: A tobacco control plan for England", available at www.gov.uk/government/publications/the-tobacco-control-plan-for-England (accessed 6 January 2016).

DECIPHer-ASSIST. (2017), "DECIPHer-ASSIST smoking prevention programme", available at http://www.decipher-impact.com/ ASSIST programme (accessed 3 March 2017)

Dohnke, B., Weiss-Gerlach, E. and Spies, C. D. (2011), "Social influences on the motivation to quit smoking: main and moderating effects of social norms", *Addictive Behaviors* **36**:286-293.

Elsey, H., Owiredu. E., Thomson, H., Mann, G., Mehta, R. and Siddiqi, K. (2015), "Do children overestimate the extent of smoking among their peers? A feasibility study of the social norms approach to prevent smoking", *Addictive Behaviors* **41**:7-11.

Echeverria, S. E., Gunderson, D. A., Manderski, M. T. B. and Delnevo, C. D. (2015), "Social norms and its correlates as a pathway to smoking among young Latino adults", *Social Science and Medicine*.**124**:187-195.

Fidler, J. A., Wardle, J., Henning Brodersen, N., Jarvis, M. J. and West, R. (2006), "Vulnerability to smoking after trying a single cigarette can lie dormant for three years or more", *Tobacco Control* **15**:205-209.

Fry. G, Grogan. S, Gough. B and Conner, M. 2008. "Smoking in the lived world: young people make sense of the social role cigarettes play in their lives", *British Journal of Social Psychological Society* **47**:763-780.

Goddard, E. (1990), "Why children start to smoke", An enquiry carried out by social survey division of OPCS on behalf of the department of health. London. *HMSO*.

Haines, M. and Spear, S. F. (1996), "Changing the perception of the norm: A strategy to decrease binge drinking among college students", *Journal of American College Health* **45**:134-140.

Health and Social Care Information Centre (2013), "Smoking, drinking and drug use among young people in England", available at www.hscic.gov.uk (accessed 3 January 2016).

Health and Social Care Information Centre (2015), "Statistics on smoking", available at www.hscic.gov.uk/catalogue/PUB17526/stat-smok-eng-2015-rep.pdf (accessed 3 January 2016).

Hopkinson, N. S., Lester-George, A., Ormiston-George, A., Smith, N., Cox, A and Arnott, D. (2013), "Child uptake of smoking by area across the UK", *Thorax* **0**:1-3.

Jackson, C. and Dickinson, D. (2004), "Cigarette consumption during childhood and persistence of smoking through adolescence", *Archives Paediatric Medicine* **158**(11):1050-1056.

Jackson, C., Geddes, R., Haw, S. and Frank, J. (2012), "Interventions to prevent substance use and risky behaviour in young people: A systematic review", *Addiction* **107**:733-747.

Kohonen, T. (1990), "Self-Organising Maps", *Proceedings of the IEEE:*1464-1480.

Kohonen, T. (2001), *Self-Organising Maps*, 3rd edition, Springer: New York.

Lapinski, M. and Rimal, R. (2005), "An explication of social norms", *Communication Theory* **15**(2):127-147.
Lightowlers, C., Morleo, M., Harkins, C. and Garden, H. (2009), "Understanding young people's alcohol-related social norms in Sefton-Interim Report", Liverpool, John Moores University, available at http://www.cph.org.uk/wp-content/uploads/2012/08/understanding-young-peoples-alcohol- related-social-norms-in-sefton---interim-report.pdf (accessed 6 June 2016).
McAlaney, J., Bewick, B. and Hughes, C. (2011), "The international development of the social norms approach to drug education and prevention", *Drugs: Education, Prevention and Policy* **18**:81-89.
Milton, B., Woods, S. E., Dughil, L., Porcellato, L. and Springett, R. J. (2008), "Starting young? children's experiences of trying smoking during pre-adolescence", *Health Education Research*, **23**(2):298-309.
Miller, D.T. and Prentice, D.A. (2016), "Changing norms to change behavior", *Annual Review of Psychology*, **67**:339-361
Moller, A., C., Merchant, G., Conroy, D.E. et al. (2017), "Applying and advancing behavior change theories and techniques in the context of a digital health revolution: proposals for more effectively realizing untapped potential", *Journal of Behavioral Medicine* , **40**:85–98
Moreira, M.T., Smith, L.A., Foxcroft, D. (2009), "Social norms interventions to reduce alcohol misuse in University or College students", *The Cochrane Library*. available at https://www.ncbi.nlm.nih.gov/pubmed/19588402 (accessed June 2016).
National Institute for Health and Care Excellence (2010), *School-Based Interventions to Prevent the Uptake of Smoking Among Children*, *NICE*, London.
Ofcom (2015). "The communications market report", available at stakeholders.ofcom.org.uk/binaries/research/cmr/cmr15/CMR_UK_2015.pdf (accessed 6 June 2016)
Office of National Statistics (2013), "General lifestyle survey overview: A report on the 2011 general lifestyle survey", available at www.ons/gov.uk (accessed 6 June 2016)
Ogden, J. and Nicoll, M. (1997), "Risk and protective factors: An integration of the epidemiological and psychological approaches to adolescent smoking", *Addiction Research*. **5**:367- 378.
Owen, L. and Bolling, K. (1995). *Tracking Teenage Smoking*. Health Education Authority: London.
Perkins, H. W. (1995), "Scope of the problem: misperceptions of alcohol and drugs", *Catalyst* **1**:1-2.
Perkins, H. W. (1997), "College students misperceptions of alcohol and other drug norms among peers: exploring causes, consequences and implications for prevention programmes", in *Designing Alcohol and Other Drug Prevention Programs in Higher Education- Bringing Theory into Practice*. Blum, T. W. et al. (Eds). U.S. Department of Education:177-206.
Perkins, H. W. (2003), *The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators*, Counsellors and Clinicians. CA: Jossey-Bass: San Francisco.
Perkins, H. W. and Berkowitz, A. D. (1986), "Perceiving the community norms of alcohol use among students: some research implications for campus alcohol education programmes", *International Journal of Addiction* **21**:961-976.
Perkins, H. W. and Wechsler, H. (1996), "Variation in perceived college drinking norms and its impact on alcohol abuse: A nationwide study", *Journal of Drug Issues* **26**:961-974.

Perkins, H.W., Meilman, P.W., Leichliter, J.S., Cashin, M.A., Presley, C.A. (1999), "Misperceptions of the norms for the frequency of alcohol and other drug use on college campuses", *Journal of American College Health* **47**:253-258.

Pfau, M and Van Bockern, S. (1994), "The persistence of inoculation in conferring resistance to smoking initiation among adolescents", *Human Communication Research* **20**: 413-430.

Plumridge, E. W.,Fitzgerald, L. J. and Abel, G. M. (2002), "Performing coolness: smoking refusal and adolescent identities", *Health Action Research* **17**:167-179.

Royal College of Physicians (2010), *Passive Smoking and Children*, *RCP*: London.

RUDifferent (2017), "The RUDifferent programme web Site", http://www.rudifferent.co.uk/, (accessed 8 march 2017)

Scholly, K., Katz., Gascoigne, J. and Holck, P. S. (2005), "Using social norms theory to explain perceptions and sexual health behaviors of undergraduate college students: An exploratory study", *Journal of American College Health*, **53**(4):159-166.

Stigler, M. H., Neusel, E. and Cheryl, L. P. (2011), "School-based programs to prevent and reduce alcohol use among youth", *Alcohol Research and Health* **34**:2, 157-162.

Wehrens, R. (2011), "Supervised and unsupervised self-learning maps, package Kohonen version 2.0.7", available from CRAN repository, https://cran.r-project.org/mirrors.html (accessed 8 October 2015).