Effects of Norm Referent Salience on Young People’s Dietary Orientation

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Abstract

We examined the effects of making salient different norm referents on young people’s dietary orientation. Participants were exposed to a referent who was either of similar age to themselves or older before reporting their normative beliefs, attitudes and intentions concerning dietary behavior. As predicted, exposure to the older referent was associated with stronger perceptions that eating five portions of fruits and vegetables each day was normative. Compared to those exposed to the same-age referent, participants exposed to the older referent reported more positive attitudes towards eating “five-a-day” and stronger intentions to do so over the coming week. Referent salience was also associated with a behavioral outcome, with those participants exposed to the older referent more likely to take a piece of fruit upon completion of the study (OR: 4.97, 95% CI: 1.39 - 17.82). The implications of these findings for norms-based interventions for changing dietary behavior are discussed.

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RUNNING HEAD: Referent Norm Salience and Dietary Orientation

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People’s beliefs about the kinds of behaviors that are conducive to good health, and those that contribute to ill-health, are influenced by social norms (1-3). Social norms—perceptions concerning how significant other people behave and what they approve of (4)—are particularly influential in contexts where broad social categories (e.g., age, gender) are easily cued, and hence where significant referents are salient (5-6). However, as we outline below, there is a gap in understanding of how beliefs and behaviors that are regulated by social norms can be effectively and sustainably changed. The current study takes a unique approach to this problem by examining ~~In the current research, we examined~~ the effects of cueing self-relevant referents of different ages on young people’s dietary orientation.

For many young people, including those attending university, health-risk behaviors are inextricably linked to the way in which they see themselves in terms of their identities as “young people” or “university students” (2). Studies have revealed the strong ~~group~~ social norms that exist ~~in university contexts~~ concerning the performance of health-risk behaviors like poor diet and excessive alcohol consumption (7-~~9~~11). These norms can work against targeted efforts to change people’s health behaviors. For example, despite regular and frequent attempts by universities to promote health amongst their students, for example by making healthy options easily available on campus (availability of fruit and vegetables at meal times in university halls of residence; educational initiatives promoting safe alcohol consumption), behavior has proved stubbornly resistant to change (~~10~~12). Indeed, there is evidence that norms-based health promotion initiatives can cause “backlash” effects, reinforcing ill-health norms and making undesired cognitions and behaviors more likely than previously (~~11-12~~13-14).

 Social norms research raises important questions about how best to change people’s health cognitions and behaviors. Attempts to (re-)educate people about the health benefits of changing behavior (or about the ill-health consequences of their current behavior) are unlikely to be successful when the desired behavior is in conflict with a salient norm. A series of studies demonstrated that people are unlikely to pursue behaviors like healthy eating and exercising when those behaviors are not regarded as self-relevant (2,~~13~~15). Consequently, when a health promotion initiative is perceived by its target recipients to work against the norms of a particular social category, be that “young” or “university student” and so on, that initiative is likely to have limited impact. This suggests that interventions seeking to change behavior should take account of social factors structuring people’s health decision-making—and specifically referent norms that underpin specific behavior. While several studies have examined the effects of making alternative (health-promoting) norms salient, or correcting norm mis-perceptions (12), initiatives have not yet controlled the self-relevance, or fit, of those norms. We argue here that initiatives which make salient health-promoting social norms (eating healthily, exercising etc.), and which are also relevant to the target recipients, are likely to have most impact in terms of changing young people’s health orientation. To test this idea, the current research examined the effects on university students’ health cognitions and behavior of making salient a self-relevant referent with a normative orientation towards health. Our focus was on orientation towards dietary decision-making: specifically, the consumption of fruit and vegetables.

 It is recommended that people consume a minimum of 400g of fruit and vegetables each day in order to help reduce the risk of chronic illnesses such as heart disease, cancer and diabetes (~~14~~16). Public health campaigns have translated this recommendation through advice to consume a specific number of portions of fruit and vegetables—e.g., in the UK, the so-called “five-a-day” initiative(~~15~~17). However, the majority of young people fall well short of this target: just 11% of males and 8% of females aged up to 18 years are reported to meet the recommended five-a-day target (~~16~~18). Such data reflect findings from research showing that young people prioritise shorter-term goals like gaining employment over their longer-term health (~~17~~19). The data also reflect findings from research indicating that general risk-taking is more marked in 18-24 year olds than in other age groups (~~18~~20).

Despite often orienting towards health-risk behaviors (~~19~~21), it is also clear that young people see this orientation as being closely tied to their (time-limited) youth identity—part of what it means *to be young*—and therefore something that might change in the future when other identities become more self-relevant. Indeed, when questioned about their health beliefs, young people have described young adulthood as a temporary life-phase that is characterised by health-risk behaviors (~~20~~22). This might suggest that young people regard health promotion as something “for older people” and something that will become more relevant to them as they transition out of their youth. Indeed, when it comes to dietary behavior, there is evidence that older people are closer to meeting the recommendation for daily consumption of fruit and vegetables than are younger people (~~16~~18).

Drawing on these observations, the current study tested the effects of cueing different self-relevant referents on young people’s dietary orientation. To the extent that young people are aware of the different health orientations of younger and older people, it may be possible to increase their commitment towards particular behaviors liking eating five-a-day. Specifically, we would expect that when an older referent is salient to them (the norms of which should be ~~less~~ more conducive to a healthy diet), young people’s dietary orientation will be more positive compared to when a similar-age referent is salient (the norms of which should be less conducive to a healthy diet). In short, young people’s expressed orientation towards diet should be in line with the perceived norms of the referent that is salient.

We tested these predictions in the current study with a sample of young people attending university. We compared the effects of making a referent salient who was either similar in age (around 21 years) or older in age (around 35 years) to the participants on participants’ orientation towards dietary behavior (the “five-a-day” initiative). These two ages were chosen because they correspond with the developmental stages of early adulthood transition (17-22 years) (23,24) and culminating life structure (33-40 years, characterised by realising aspirations about career, relationships and responsibilities) (25). It was hypothesised that~~: (H1) C,~~ compared to a same-age referent, making salient an older referent would be associated with stronger beliefs that eating the recommended daily amount of fruit and vegetables is normative (H1). Further, ~~; (H2) C~~ compared to participants exposed to a same-age referent, participants for whom an older referent was salient would report a more positive attitude towards eating the recommended daily amount of fruit and vegetables, and stronger intentions to do so (H2a). These effects should be mediated by norm perceptions, with stronger norm perceptions underpinning more positive attitudes and intentions (H2b). ~~; (H3)~~ Finally, it was hypothesised that, ~~C~~compared to participants exposed to a same-age referent, participants for whom an older referent was salient would be more likely to engage in behavior consistent with the perceived norms of the referent (H3).

Method

*Participants and Design*

 Undergraduate university students aged 18-21 years (*M*age = 19.35, *SD* = 1.15; *N* = 60: 20 females, 40 males) from a university in the UK were randomly assigned to one of two referent conditions: 30 participants were exposed to a referent who was approximately 21 years of age (“same-age referent” condition), and 30 participants were exposed to a referent who was approximately 35 years old (“older referent” condition). This sample size was determined based on an effect size of *d*=.66 obtained in Tarrant and Butler’s (26) experimental study of undergraduate students’ health norm perceptions.

*Materials and Procedure*

 Participants were approached on their university campus and informed that the study was a survey of young people’s eating behavior. Consenting participants were first asked to report their recent consumption of fruit and vegetables. They were presented with the names of five categories of food (fresh fruit & vegetables, fruit/vegetable smoothies, fruit/vegetable juices, salads, dried fruits) and asked to indicate how many portions of each category they had consumed over the past seven days. They were then asked to indicate whether or not they believed their consumption of these foods was in line with recommended levels.

Referent salience was then manipulated using a perspective-taking paradigm (~~21~~27) in which participants were asked to think about someone with whom they had a close personal connection who was aged around either 21 years (same-age referent condition) or 35 years (older referent condition). Perspective-taking can promote a sense of psychological connection to others and has been found to lead to an increased sense of self-other “merging”, or “cognitive overlap” between the self and the target of perspective taking (~~22-24~~28-30). By having participants adopt the perspective of the target referent, it was anticipated that the referent would be more likely to be someone with whom participants felt a sense of psychological connection, and thus a significant source of normative influence (~~25~~31). Following Galinsky and Moskowitz (~~21~~27), participants were asked to write a paragraph describing a “typical day in the life” of the referent, and to “adopt the perspective of this person and imagine a day in their life as if you were them, looking at the world “through their eyes” and “walking through the world in their shoes”.

The effect of referent salience on participants’ dietary orientation was then assessed using measures derived from Ajzen (~~26~~32). First, participants reported their perceptions of social norms concerning the five-a-day initiative. Four items assessed beliefs about injunctive norms (e.g., “To what extent do you agree that people like the person you wrote about expect you to eat five portions of fruit and vegetables each day?”; Cronbach’s alpha = .77), and three items assessed their beliefs about descriptive norms (e.g., “Most people like the person you wrote about eat five portions of fruit and vegetables each day”; Cronbach’s alpha = .78). Second, participants reported their attitudes towards eating five portions of fruit and vegetables each day over the course of the following week using four items (e.g., harmful vs. beneficial; unenjoyable vs. enjoyable; Cronbach’s alpha = .86). Third, participants reported their intentions to eat five portions of fruit and vegetables each day over the following week using four items (e.g., “I intend to eat five portions of fruit and vegetables each day over the next 7 days”; Cronbach’s alpha = .79). All responses were given on 7-point scales, where a higher score indicated stronger perceived norms, more positive attitudes, and stronger intentions to perform the behavior.

*Behavioral outcome.* The final part of the study examined the effects of referent salience on behavior. Immediately after completing the dietary orientation measures, participants were invited to take a piece of fruit from a selection, offered to them by the experimenter as an appreciation for participating in the study. The number of participants in each condition who accepted a piece of fruit was recorded.

Results

Most participants reported consuming fewer fruits and vegetables in the week preceding the study than the amount recommended in official guidelines (mode number of fruits/vegetables per day = 2; *M* = 3.42 (*SD* = 1.51)). There was no difference in past consumption between participants in the same-age and older referent conditions: *t*(58) = .56, *p* = .58, *Cohen’s d* = .15; 95% CI: -1.01 - .57). Similarly, there were no differences across conditions in the patterns of fruit and vegetable consumption reported by participants (MANOVA *F*(5, 54) = .43, *p* = .83, *p2* = .04; *p* = .93)**.** Participants were aware ~~when~~ that their past consumption had not met the recommended daily levels: only 23% believed that their consumption met recommendations.

Supporting Hypothesis 1, participants exposed to the older referent reported stronger perceptions that social norms supported eating five portions of fruit and vegetables each day than did those who were exposed to the same-age referent (*injunctive norm*: *M* = 5.44 (*SD* = .57) & *M* = 4.55 (*SD* = .90) respectively: *t*(58) = 4.55, *p* < .001, *Cohen’s d* = 1.18; 95% CI: .50 - 1.28); *descriptive norm*: *M* = 5.21 (*SD* = .94) & *M* = 4.27 (*SD* = 1.09) respectively: *t*(58) = 3.60, *p* < .01, *Cohen’s d* = .95; 95% CI: .49 - 1.39; see Figure 1).

 The referent salience manipulation also elicited significant effects on participants’ attitudes and intentions concerning the consumption of fruit and vegetables (H2a). Supporting Hypothesis 2a, participants exposed to the older referent reported a more positive attitude towards eating the recommended amount of fruit and vegetables each day during the following week than did those exposed to the same-age referent (*M* = 5.49 (*SD* = .91) & *M* = 4.55 (*SD* = 1.02): *t*(58) = 3.77, *p* < .001, *Cohen’s d* = .99; CI: .44 - 1.44) and stronger intentions to do so (*M* = 4.77 (*SD* = 1.11) & *M* = 4.20 (*SD* = .79): *t*(58) = 2.28, *p* < .05, *Cohen’s d* = .60; CI: .07 - 1.07; see Figure 2).

We employeda bootstrapping procedure in INDIRECT (~~27~~33) to test whether participants’ social norm beliefs mediated the effects of referent salience on their attitudes and intentions concerning the consumption of fruit and vegetables (H2b). The pattern of mediation was similar for the injunctive and descriptive norm scales and so these scales are combined here for ease of presentation (Cronbach’s alpha = .84). We also entered age and gender as covariates into the analyses. For *attitudes*, there was a significant effect of referent salience on attitudes (*β* = .95, *SE* = .26, *t* = 3.72, *p* < .01) and on the mediator, social norms (*β* = .91, *SE* = .20, *t* = 4.62, *p* < .001). There was also a significant relationship between social norms and attitudes, with stronger perceptions that eating fruit and vegetables was normative associated with more positive attitudes towards this behavior (*β* =. 98, *SE* = .12, *t* = 8.44, *p* < .001). When referent salience condition and social norms were entered into the equation simultaneously, the direct effect of referent salience on attitudes was rendered non-significant (*β* = .06, *SE* =.20, *t* = .31, *p* = .76). The indirect effect was significant, as the bias-corrected confidence interval did not include zero (99% CI: .49 - .13). Neither age (*β* = -.07, *SE* = .08, *t* = -.70, *p* = .49*ns*) nor gender (*β* = .01, *SE* = .19, *t* = .04, *p* = .97*ns*) predicted attitudes. Thus, social norms significantly mediated the effect of referent salience on attitudes towards fruit and vegetable consumption (Figure 3). Taken together, the model explained 63% of the variance in attitudes (*R2adj* = .63, *F*(4, 55) = 25.68, *p* < .001).

 Social norms also mediated the effect of referent salience on participants’ *intentions* to eat fruit and vegetables over the following week (Figure 4). There was a significant effect of referent salience on intentions (*β* = .60, *SE* = .25, *t* =2.41, *p* < .05) and on social norms (*β* = .91, *SE = .20*,t = 4.62, *p* < .001), as well as a significant relationship between social norms and intentions: stronger perceptions that eating fruit and vegetables was normative was associated with stronger perceptions to perform this behavior (*β* = .47, *SE* = .16, *t* = 2.97, *p* < .01). When referent salience condition and social norms were entered into the equation simultaneously, the direct effect of referent salience on intentions was rendered non-significant (*β* = .17, *SE* = .28, *t* = .63, *p* = .53), and the bias-corrected confidence interval did not include zero (99% CI: .05 - .98). Neither age (*β* = -.06, *SE* = .11, *t* = -.58, *p* = .56*ns*) nor gender (*β* = -.36, *SE* = .27, *t* = 1.36, *p* = .18*ns*) were significant predictors of intentions in the model, which explained 19% of the variance in intentions (*R2adj* = .19, *F*(4, 55) = 4.35, *p* < .01).

*Behavioral outcome:* Overall, 43 participants (72%) accepted a piece of fruit at the end of the study. However, this effect varied across the two referent conditions, as predicted by Hypothesis 3. While 17/30 participants (57%) exposed to the same-age referent accepted a piece of fruit, all but four participants (i.e., 26/30, 87%) in the older referent condition did so (*χ2*(1) = 6.65, *p* < . 05; OR: 4.97, 95% CI: 1.39 - 17.82).

Discussion

Many young people fail to meet recommended targets for health behaviors like diet (~~16,17~~18,19). Reflecting this observation, young participants in the current research reported eating lower amounts of fruit and vegetables than is typically advocated in public health campaigns. However, participants here showed that orientation towards dietary behavior varies as a function of the norm referent that is available to them. As predicted, participants’ cognitions concerning dietary behavior (eating “five-a-day”), and beliefs about the norms underpinning these cognitions, differed according to the specific referent that was salient. First, participants for whom an older referent was salient reported stronger perceptions that eating five portions of fruit and vegetables each day was normative than did participants for whom a same-age referent was salient. This effect was observed both on the injunctive norm measure (an indicator of what participants believed significant others valued) and on the descriptive norm measure (how participants believed significant others behaved). In short, participants’ personally expressed normative beliefs varied with the referent that was salient to them, with the older referent being associated with a more normative orientation towards dietary behavior (H1).

 There was also a clear effect of referent salience on participants’ dietary cognitions. Compared to when the same-age referent was salient, participants exposed to the older referent reported more positive attitudes towards eating five portions of fruit and vegetables per day, and stronger intentions to pursue this behavior each day during the course of the following week (H2a). The mediational analysis confirmed that these effects were underpinned by participants’ beliefs about social norms, as predicted by Hypothesis 2b: for both the attitudes and intentions measures, beliefs that eating five portions of fruit and vegetables each day was normative mediated the effects of referent salience.

 These findings indicate that the way in which young people think about and articulate their beliefs about dietary behavior are not necessarily fixed, stable constructs, but constructs that vary in ways which reflect the content of salient referent norms. Notably, the study provides early evidence that this variability may not be restricted to ~~people’s~~ cognitions about dietary behavior but may also extend to the behavior itself. While the behavioral measure employed in the current study was restricted to capturing participants’ behavior in the immediate aftermath of the study, nonetheless there was a strong association between referent salience and participants’ actions. Specifically, more participants took a piece of fruit when it was offered to them at the end of the study when the older referent was salient than when the same-age referent was salient. Indeed, participants exposed to the older referent had almost five times the odds of taking a piece of fruit as those exposed to the similar-age referent. Put another way, participants exposed to the older referent were 1.52 times more likely to take the fruit.

 Governments have urged universities to take a more active, interventionist, role in promoting the adoption of health behaviors in students and young people (~~28~~34). There is some evidence that social norms approaches can be effective in this regard (~~29~~35). However, campaigns that seek to change students’ behavior by communicating the (ill-health) norms underpinning it sometimes exhibit a “backlash effect”, encouraging stronger commitment to the undesired behavior amongst recipients (~~11,12~~13,14). One possible reason for this backlash is that norms campaigns often fail to take account of recipients’ social identities that are salient at the time and which can promote behaviors other than those advocated by a given campaign (~~10~~12). Our study uniquely highlights the potential of perspective taking to cue referents which are self-relevant and also positively oriented towards health, and therefore suggests a way in which this backlash can be reduced. ~~Our study suggests that by cueing referents that are both self-relevant and positively oriented towards health behavior, the potential for backlash may be reduced. Indeed,~~ ~~i~~It is notable that norms underpinning dietary beliefs were not explicitly communicated to participants in the current study; rather, participants were allowed to infer these norms for themselves. The clear effect of referent salience on participants’ perceptions of health norms highlights the relative ease with which such norms can be brought to mind.

While the focus of the current study was on young people’s dietary orientation, it is feasible that similar effects would also present in other health domains. Indeed, previous research has shown ~~the~~ an association between social norms and orientation towards a broad range of health behaviors, from alcohol consumption and exercise, to sun-protection behaviors (1,8,~~30~~36). To the extent that there are self-relevant referents available who represent those norms, making salient such referents might prove to be an effective means of encouraging positive orientation towards desired health behaviors.

Clearly, more research is needed before we can make conclusive recommendations for the application of this approach to norms-based health campaigns, not least an understanding of the longer-term effects on young people’s dietary behavior and associated cognitions. It is also important to note that our focus here on young people attending university may limit generalization to other social contexts (e.g., to the development of health campaigns for young people who are not students). Further, while we would expect the current study participants’ BMI range to be within normal parameters, consistent with much previous research involving university students (e.g., 37,38), a limitation of this research is that we did not collect BMI data. Despite random assignment of participants to experimental conditions, there remains a possibility that the BMI of participants in the two conditions differed slightly: by not having BMI data we were unable to control for this possibility. However, given the likely small proportion of overweight/underweight participants in the sample as a whole, we would not expect any such weight differences across conditions to substantially alter the pattern of results reported here; nonetheless, future research should collect BMI data and assess its potential role in structuring responses to norms-based campaigns. ~~This~~ Limitations notwithstanding, the findings from the current study highlight a promising contribution to the development of new approaches to shaping people’s dietary and other health behaviors. Most pertinently, the study articulates the importance of taking account of the norms-based influences on young people’s health cognitions and behaviors and advocates working with these influences to craft positive orientation towards desired health outcomes.

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*Figure 1:* Effects of ~~salient referent~~ referent salience on perceptions of norms concerning the recommended daily consumption of fruit and vegetables

*Figure 2:* Effects of ~~salient referent~~ referent salience on attitudes towards, and intentions concerning, the recommended daily consumption of fruit and vegetables

*Figure 3:* Mediation model predicting attitudes towards the recommended daily consumption of fruit and vegetables

Norms

Condition

(referent salience)

.91\*\*\*

.91\*\*\*

.95\*\*\* (.06)

Attitudes

*Figure 4:* Mediation model predicting intentions concerning the recommended daily consumption of fruit and vegetables

Condition

(referent salience)

Norms

.91\*\*\*

.48\*\*\*

.60\*\*\* (.17)

Intentions