

# Visual and participatory research techniques: photo-elicitation and its potential to better inform public health about physical activity and eating behavior in underserved populations

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## Abstract

**Aim** A healthier America depends on the development of strategies and interventions that are inclusive of and attentive to the needs of at-risk groups. This commentary seeks to contribute to the discussion of such interventions by advocating for the use of photo-elicitation (PE) as a research tool that can enhance the impact of studies targeting health behaviors such as physical activity and diet.

**Subject and Methods** This commentary discusses the extent to which PE may enhance the quality and outcomes of research studies that aim to understand health behavior in underserved groups. We describe some of the advantages and disadvantages of the application of PE in public health research. This analysis is timely because public health researchers and practitioners are currently engaged in efforts to better understand health behaviors in specific racial and ethnic groups in an attempt to mitigate health disparities.

**Results** Participatory research techniques (PRTs) such as PE are promising tools for elucidating an individual's knowledge and perceptions of his or her socio-cultural context. As a participant-centered method, it can directly benefit individuals and their communities. Within the behavioral health sciences, it has the potential to advance knowledge of the determinants of physical activity and healthy eating habits as well as of the enablers and deterrents of these key health behaviors.

**Conclusion** The new insights that investigators can acquire by employing PRTs such as PE may help public health researchers to develop culturally sensitive strategies and culturally meaningful intervention programs that have a better chance of reaching and benefiting at-risk populations.

**Keywords** Health disparity · Health promotion · Minority groups · Photo-elicitation · Qualitative studies · Visual methods

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This commentary discusses the potential of photo-elicitation (PE), a participatory research technique, to help better inform the field of public health with respect to the importance of physical activity and healthy eating for the prevention of chronic diseases and conditions in underserved populations. PE has a long history in the social sciences; however, it has been seldom used in the health sciences. PE is a useful technique for breaching the communication impasse and bridging geographical and cultural gaps between interviewees and interviewers and for collecting more quantitatively and qualitatively complete data compared to more traditional research methods (Bignante 2010). PE also has the potential to improve health and mitigate health disparities by bridging gaps between research and practice, by addressing social justice issues, and by helping research participants provide critical information regarding personal determinants of their health

status (Cargo and Mercer 2008). The information gathered through PE provides insights that are not always possible to obtain in more traditional verbal interviews and focus groups (Bignante 2010). We make the case for PE based on our previous successful experiences with the method (Gálvez et al. 2015; Najib Balbale et al. 2014; Sebastiao et al. 2014). We have spent a significant amount of time searching for the most appropriate research methodology to understand the lives of our target population (i.e., older Hispanic and African American women). Our experience with PE has allowed us to capture important aspects of the culture, values, and beliefs that impact these populations. The process of taking pictures and subsequently talking about the images is effective in engaging participants and allowing them to express their knowledge and beliefs. This commentary is especially timely because many public health practitioners are searching for ways to better understand health behaviors in minority populations in order to mitigate the impact of long-standing health disparities.

Health disparities are a major challenge in the USA. Underserved African Americans and Hispanics are vulnerable to unhealthy lifestyles and adverse health outcomes. The top two goals of Healthy People 2010 were to increase the quality and years of healthy life and to eliminate health disparities. Unfortunately, little progress has been made toward the achievement of either of these goals. Increasingly and persistently, the research, policy, and public health practice literature reports substantial disparities in life expectancy, morbidity, risk factors, and quality of life among underrepresented segments of the population (CDC 2011; CDC 2013). Persistent disparities are also salient in healthy lifestyle behaviors such as engagement in physical activity at recommend levels and healthy eating (Macera et al. 2005; Marshall et al. 2007; Troiano et al. 2008; Wang and Beydoun 2007).

Promoting healthy lifestyle behaviors can be a simple yet effective way to prevent and treat many major chronic diseases and conditions—such as cardiovascular disease, diabetes, certain types of cancer, and obesity—that affect large numbers of people worldwide. Together, these diseases account for the majority of mortality and morbidity burdens in many societies. Compelling evidence suggests that modifiable lifestyle factors such as physical activity and diet can be key contributors to the prevention and treatment of a wide range of chronic diseases (Ford et al. 2009; Kokkinos 2012). Despite the impressive body of evidence supporting interventions that target these factors, and despite the undeniable benefits of physical activity and healthy eating, rates of physical activity participation at recommended levels are low, as are rates of healthy eating, with reports showing that the consumption of unhealthy food is on the rise (BRFSS 2011; HSCIC 2015; Kimmons et al. 2009; Kohl et al. 2012; McGuire 2013).

The current high rate of unhealthy lifestyle practices suggests that the strategies being used to change behavior and address chronic disease are not achieving the desired effect. This problem appears to be most severe in underserved groups. For

example, African Americans and Hispanics living in the USA are particularly vulnerable to unhealthy lifestyle behaviors, such as physical inactivity and inadequate diet, and to the consequent chronic diseases (Batis et al. 2011; Troiano et al. 2008). One possible reason for this could be researchers' inability to incorporate culturally tailored materials and/or elements into their programs (Sutton et al. 2004). Thus, research approaches that deliberately take into account different cultural perspectives and beliefs are of great importance if we are to be able to develop more meaningful and relevant interventions for use in underserved and minority groups. Studies that are able to provide new insights into healthy behaviors among underserved groups are critical to increasing our understanding of the determinants of health in these groups. PE is a participatory research technique with the potential to provide such rich in-depth information as well as to generate new insights about physical activity and eating behavior in underserved groups.

Participatory research is defined as a type of research method in which participants take action in phases of the research study rather than being included only as subjects of the research (Cargo and Mercer 2008). Participatory visual and digital methods help to include participants as active participants in the research process (Gubrium and Harper 2013). PE is based on the simple idea of inserting a photograph into a research interview (Harper 2002). PE asks people to take photographs of salient features of their lives that are both personally meaningful and possess significant explanatory power (Harper 2002). The difference between interviews using images and text and interviews using words alone lies in the way individuals respond to these different forms of symbolic representation (Harper 2002). Most elicitation studies use photographs that can be taken by participants or by the researcher, but there is no reason studies cannot be done using other sources such as paintings, cartoons, and public displays (e.g., graffiti, advertising billboards, virtually any visual image).

The development of participatory research techniques and PE methods emerged out of a late twentieth-century shift in thinking in the social sciences that began to challenge the claim that research can or should be truly "objective." Instead, researchers began to intentionally address issues from a variety of different points of view. This shift played a major role in promoting the diffusion of new, more "evocative" non-textual research strategies to capture and explore values and emotions more effectively. PE is based on the principle of using one or more images in an interview and asking individuals to comment on them. Individuals may produce the images themselves or investigators may provide them. In the first case, the individuals produce the images and then discuss their meaning with the researchers. A pivotal aspect of this approach is not so much studying the images as objects of analysis in and of themselves, but rather studying how individuals respond to them—how they bestow the images with social and personal values and emotions (Ruby 1995).

In PE, researchers assume that studying the images, the meaning individuals attribute to them, and the emotions they arouse in both researchers and individuals has the potential to generate insights that do not correspond to those obtained in verbal inquiry. To support this claim, investigators (Barthes 1981) commonly stress the polysemic quality of images, i.e., the fact that they are open to multiple meanings and interpretations. The images are like coded messages waiting for the interviewee to decipher them. Each interaction with and interpretation of an image engages the behaviors and thought processes that are mediated by social and cultural factors (Banks 2001). The act of observation is inextricably linked to each individual's way of thinking about, imagining, remembering, and combining things, people, ideas, and events.

Large epidemiological and randomized controlled trials have helped to build the foundations of current public health policy and to develop interventions promoting healthy behavior at the population level. However, African Americans and Hispanics consistently experience higher rates of chronic diseases and lower rates of physical activity participation at recommended levels, and they are more prone to unhealthy eating behaviors compared to Whites in the USA (CDC 2013; Pérez-Escamilla 2011; Troiano et al. 2008). To this end, research methods that seek to understand how a given behavior is embedded in an individual's socio-cultural environment would be of great advantage to public health practitioners. One such method, participatory research, has been widely applied in social science fields such as anthropology and sociology, where it has a long history (Becker 1974; Cook and Fonow 1986; Hall 1992). For instance, investigators pointed out that several investigators conducting feminist research in sociology in the 1980s advocated for the use of visual methods and participatory research techniques throughout the research process (Cook and Fonow 1986). Although such approaches have not gained much traction among researchers in the health and behavioral sciences, Wang and colleagues conducted studies at the end of the 1990s that introduced the use of participatory research within the field of public health (Wang and Burris 1994; Wang and Burris 1997; Wang et al. 1998).

With respect to physical activity and eating behavior, Fleury et al. (Fleury et al. 2009) employed PE to explore resources related to physical activity in Hispanic women. Similarly, Sebastião et al. explored physical activity perceptions, barriers, and motivators in older African American women using PE and concluded that insight and understanding was enhanced by the use of such techniques (Sebastiao et al. 2014). Najib-Balbale et al. demonstrated that PE may be a valuable tool to enhance the development of mass communication health messages among older Hispanic women (Najib Balbale et al. 2014). Most recently, Galvez et al. used PE to explore factors influencing the eating behavior of Chilean women (Gálvez et al. 2015). The number of studies

using participatory approaches in the public health sciences thus appears to be growing (Catalani and Minkler 2010), but more studies are needed to develop a comprehensive and in-depth understanding of the role of physical activity and eating behavior in underserved groups. The reasons why researchers do not tend to use this approach are unknown. However, it is possible to speculate that PE is not a widespread method within public health since it has roots in the social sciences; it is possible that most researchers in this area are not aware of the technique or its potential as a research method.

We believe that PE is an effective alternative method with substantial potential in the hands of health and behavioral science researchers. Culture has become a very important element in public health and health promotion. PE is an easy method for capturing key elements of cultural values and beliefs. Lachal et al. stress that PE can “facilitate verbalization” of thoughts in a way that enables researchers and practitioners to better comprehend perceptions, barriers, and facilitators of those complex behaviors (Lachal et al. 2012). Allowing participants to use cameras helps them to capture and convey the reality of their lived experience by highlighting a large array of individual, family, and community resources and needs. Furthermore, the act of sharing and talking about photos reveals how visual images empower individuals to communicate not only their lived experience, but also their expertise and knowledge (Wang et al. 1998). Beyond encouraging people to record and reflect on the positive and negative aspects of their community that these images capture, participatory research methods (i.e., PE) may initiate a critical dialogue on those issues and images—a dialogue with the potential to reach policymakers (Wang and Burris 1997).

It is important to note that PE should not be used as a replacement for other methods of inquiry such as traditional interviews or focus group interviews. On the contrary, it should be treated as a supplementary approach that triangulates among different information sources and introduces different insights into research findings. PE can thus function as an adjunct to other methods by providing additional validity and depth and offering new information, viewpoints, and opportunities.

As with other methods, particular attention should be paid to the pros and cons of PE and its potential limitations. PE is arguably a relatively time-consuming activity for both researchers and study participants. Preferably, it should only be adopted when it contributes constructively to the investigation. PE stimulates participants' ability to express their practical knowledge through the attribution and association of meanings. In doing so, participants not only provide information, but they also describe their perceptions of how that information relates to a specific behavior/phenomenon, along with the values they attribute to that behavior/phenomenon. Depending on the specific goals of a study, these responses may be extremely relevant or tangential and time-consuming.

In certain cases, PE may be inappropriate, rejected, or simply not readily accepted by the target population. However, several studies (Fleury et al. 2009; Gálvez et al. 2015; Najib Balbale et al. 2014; Sebastiao et al. 2014) provide evidence that PE can be a useful technique for breaching the communication impasse and bridging geographical and cultural gaps between the interviewee and interviewer as well as for collecting more quantitatively and qualitatively complete data compared to that obtained by using “words” only (Bignante 2010). PE may serve as an “icebreaker” in participatory research studies. It accomplishes this first by empowering participants to express themselves freely in producing photographs and then by encouraging participants to explore associations of meanings, values, and emotions in the photograph discussions. PE even promises to improve the integrity of interview questions and answers. For example, PE’s emphasis on allowing participants to construct their own frameworks of understanding alongside the expert knowledge of the researcher can function as a bridge between the different “experiences of reality” both parties bring to the research (Pink 2003). Such a practice has proven useful in challenging certain preconceived notions that lead researchers (often unconsciously) to match participant replies with the responses they expect. This example reveals what is perhaps the most significant benefit of using PE: it establishes a dialogue in which participants and researchers together can build and explore complementary and concurrent understandings of their physical, social, and cultural environments.

PE is thus a promising tool for elucidating an individual’s knowledge and perception of his or her socio-cultural context. Moreover, as a participant-centered method, it can directly benefit individuals and their communities. Within the behavioral health sciences, it has the potential to advance knowledge of the determinants of physical activity and eating habits as well as of the enablers and deterrents of these key health behaviors in underserved groups. It brings insights from other social sciences to bear on the field, thus contributing to the growth of interdisciplinary research practices.

In summary, the new insights that investigators can acquire by employing PE may help public health researchers to develop culturally sensitive strategies and intervention programs with better chances of reaching and benefiting underserved groups. PE enables researchers to assess cultural values and beliefs and to understand the everyday lives of individuals and their priorities. PE is also appropriate to use with low-education groups. This is particularly important when researching underserved “at-risk populations” such as African Americans and Hispanics. PE enables an easy dialogue, permitting low-educated participants with difficulties to elaborate ideas, providing an easier and more evocative way to express themselves. Pratt (Pratt et al. 2009) mentioned that public health work has yet to consistently stage physical activity interventions at the scale required to shift the US

population to a higher and healthier level of physical activity. The same can also be said of eating behavior/food consumption interventions. Despite considerable research and programmatic efforts to alleviate disparities in health, disparities in physical activity and food consumption persist among minorities and underserved groups. A healthier America will only be possible when inclusive strategies and interventions attend to the lived experience and personal needs of at-risk groups. Accomplishing this goal will require a more comprehensive, culturally sensitive understanding of physical activity and dietary behaviors in different population groups. We are confident that participatory research/PE has great potential to contribute to this process.

#### Compliance with ethical standards

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**Ethical approval** This article does not contain any studies with human participants or animals performed by any of the authors.

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