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USING PHOTOVOICE TO INVESTIGATE NUTRITIONAL FACTORS AMONGST YOUNG WOMEN

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ИСПОЛЬЗОВАНИЕ МЕТОДА «ФОТОГОЛОС» ДЛЯ ИССЛЕДОВАНИЯ ДИЕТИЧЕСКИХ ФАКТОРОВ СРЕДИ МОЛОДЫХ ЖЕНЩИН

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Диетические погрешности являются одним из основных факторов риска развития неинфекционных заболеваний и влияют на рост распространенности избыточной массы тела и ожирения. Понимание контекста принятия решений, связанных с модификацией пищевого поведения и факторов окружающей среды, важно для разработки стратегии снижения риска связанных с питанием заболеваний.

Для понимания влияния внешней среды на пищевое поведение и выбор пищи был использован метод «Фотоголос» (Photovoice). 12 студенткам в возрасте 18–24 года предлагалось сфотографироваться с целью демонстрации на фото своих идей, мыслей и чувств на тему «Представьте Ваш ежедневный опыт с продуктами питания». В процессе дискуссии с молодыми женщинами о фотографиях были выделены четыре основные и три второстепенные темы. В этой возрастной группе фотографии предоставили внутренний взгляд на физическое окружение и ряд воздействий внешней среды на пищевые сигналы. Выявлено влияние средств массовой информации, социально сконструированных и личностных взглядов на окружающую среду, которые могут быть как внутренне контролируемы, так и поддаваться влиянию извне.

Доступность продовольствия и маркетинг были определены как сильные факторы в пищевой среде, которые являются причиной неправильного выбора продуктов питания. В целом полученные данные свидетельствуют, что суть отношений между внешними раздражителями и внутренними реакциями требует лучшего понимания для изменений в сфере организации здравоохранения и практической диетологии.

Ключевые слова: «Фотоголос» (Photovoice), ожирение, окружающая среда, выбор продуктов питания.

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Diet is a key risk factor for the development of non-communicable diseases and is implicated in the rising prevalence of overweight and obesity. Understanding the context within which individuals, especially young women, make food-related decisions and the environmental factors that act as modulators of eating behaviours is important for the development of practical effective interventions to reduce risk of diet-related disease and ill health.

This project used the Photovoice method to develop understanding of the environmental influences on the food choices and eating behaviours. A sample of twelve university students, aged 18 to 24 years, were asked to take photos to represent their ideas, thoughts, or feelings on the theme "Represent your (daily) experience with food". Discussions with the young women around the photographs yielded four major themes and three minor themes. The photographs provided insight into this age groups' view of their physical environment, revealing the multiple influences of the external environment for eating cues, ranging from media influences that are controlled externally, to socially constructed and personal views of their environment that can be both internally controlled and externally influenced.

The roles of accessibility to food, and marketing, were identified as strong factors within the food environment that act as cues to (unhealthy) food choice. In general, findings suggest that the relationship between external cues and internal responses appears complex and needs to be better understood to inform public health interventions that alter dietary practices.

Key words: photovoice, obesity, obesogenic environment, food choice.

Introduction

Food quality and consumption are important determinants of nutrition related health concerns. Diet features as a key risk factor for the development of

non-communicable diseases and is implicated in the growing issue of overweight and obesity [1]. In Australia, as well as other industrialised countries, the number of overweight or obese adults has increased by five percent-

age points in the seven years between 2001 to 2007–2008 — i.e. 57.5% of males and 42.2% of females in 2001, to 62.8% and 47.6%, respectively [2].

Eating behaviours, encompassing concepts such as ac-



cess, choice and consumption, are key determinants of dietary quality [2]. It is important to understand the context within which people make food-related decisions and the factors within the environment that act as modulators of eating behaviours. Understanding these processes and influences on food choice and eating behaviours is important for the development of practical yet effective interventions to reduce risk of diet-related disease and ill health.

The ecological model of health behaviour has been reinterpreted to conceptualise our understanding of factors that influence eating behaviours [3]. This model suggests that there multiple levels of influence on human behaviour and consequently on human health. Based on research using this model, two main themes can be identified: I) the social determinants of obesity; and II) the environmental determinants. Social determinants encompass aspects like income inequality, social capital and social cohesion; while environmental influences refer to community infrastructure, physical space use, and so on. These, along with biological and behavioural factors, determine individual health status.

Environmental influences on eating behaviour are of particular interest as they characterise the context within which individuals and society function. Modification of environments holds particular potential from a public health perspective. Research indicates that the environment influences the amount and type of food eaten [4], but the mechanisms underpinning the influences of environmental factors on eating behaviours are poorly understood. Egger and Swinburn suggest that a closer examination of specific macro-environmental sectors (e.g. food service) or of micro-environmental settings (e.g. workplaces) is likely to uncover many more inter-connecting environmental influ-

ences than those currently understood [4].

Studies investigating obesity, food choice or eating behaviour have frequently relied on indirect measures of food intake and behaviours through dietary analysis and self-reported measures, and used interpretive methods such as in-depth interviews and focus groups to explore influences. These approaches can produce reliable and valid measures, but they tend to underestimate actual intakes [5] and do not provide direct access to the actual environment, and thus cannot capture the multivariate richness of naturalistic approaches. De Castro [6] explains that taking the natural environment into account allows investigation of the complexities of intake regulation. Recent moves to investigate possible environmental factors through mapping methods, for example, have yielded important findings regarding the association of food supply and weight status with certain environmental features [7]. Nonetheless, these approaches lack connection to the human experience and meaning attached to these and their actual influence on eating-related behaviours. As such, means through which to assess the actual features of the food environment (naturalistic methods), the meaning attributed to them by those experiencing them, as well as personal perceptions (interpretive methods), may be useful for exploring further the relationship between the environment and eating behaviours.

Purpose of Study

Our **aim** was to develop understanding of the environmental influences on the food choices and eating behaviours of young adult females, using a combination of naturalistic and interpretive methods.

Method

Our study was based on Critical Theory and employs Participatory Action Research (PAR) to

immerse both researchers and participants in the context of interest and to expose invisible or silenced experiences [7]. Critical theory acknowledges the power of subtle influences that shape perceptions and behaviours of individuals and groups, and which can reinforce power inequities and positions of marginalisation [8]. PAR focuses on collaborative, critical inquiry and allows for simultaneous implementation of an intervention (action) with systematic evaluation (research). The benefits of critical reflection upon actions, a key tool of PAR, include: bringing to the surface implicit or intuitive values; making the theory that implicitly underpins practice explicit; promoting deeper insight about obstacles to change; and allowing opportunities to re-think practices and to transform everyday habits [8; 9].

Based on this philosophical position, participants were engaged in both the data collection and interpretive process, empowering them to understand complex interactions and to generate alternative understandings. Within this research, it was the intention of the authors to reduce the power of the researchers' voice through engagement of participants in critical reflection and facilitated interpretation of collected data encouraging them to find their own meanings in the process.

Photovoice was chosen as the primary method of data collection in this study, utilising the unique combination of photography, analysis and social action. This is an innovative participatory method that allows the precise capture of time and place (material reality) as well as meaning attributed by the participant [10]. It was our intention to facilitate the collaborative investigation of interactions between individuals, their environment and their eating behaviours through the use of Photovoice.



Sample

A convenience sample of twelve university students, were recruited via an email. The group consisted of women, aged 18 to 24 years old undertaking tertiary studies, and enrolled in programs to train health professionals.

Data Collection

Participants attended a training workshop which covered the Photovoice methodology, participants roles and responsibilities as photographers, how to take good photos, and importantly, the privacy, ethics, and safety issues inherent in the methodology. Participants were each given a blank notebook and a "Participants Guide" which contained reference information covered in the training. The Guide included forms (pro forma) which participants filled out following the capture of each photo. This included the following information regarding each photo: I) location of photo; II) brief description of photo or photo number; III) why they took the photo; IV) what the photo meant to them; and V) the relationship to healthy or unhealthy eating behaviours.

Each participant was asked to take photos on one weekday and one weekend day. These photos were to represent their ideas, thoughts, or feelings on the theme "Represent your (daily) experience with food". Initially, each participant met with a trained facilitator to discuss each of the photos taken against the notes they had taken of them.

Data Analysis

A focus group was then held with the participants so they could share their stories as the basis for group analysis and interpretation. The group was facilitated by a trained researcher. The participants individually grouped their photos according to the content of the photo, and then collectively coded and categorised them under main themes.

Results

A total of just over 100 photos were taken by the group. The participants came up with seven main themes that each included three to seven "codes". Four major themes and three minor themes were labelled during the focus group that influenced their eating behaviour. The major themes were: 1) media influences; 2) socialising; 3) educational, and 4) accessibility. Minor themes included: 1) exercise; 2) senses (visual, smell, taste), and 3) emotions/state of being.

Media influences

Media influences captured by participants included television commercials for takeaway and processed foods as well as general advertising, including billboard advertising, print media such as magazines. The use of media to promote cheap high energy dense foods was photographed. Magazine covers with images of models and slender women or body images with sports endorsements were captured. Participants expressed the connection between the images of 'perfect/beautiful' bodies, associations with feelings about their own bodies and the consequences of eating.

Socialising

Photographs representing socialising included pictures of traditional and cultural activities. The Australian cultural tradition of having a barbecue celebration with sausages and other meats was photographed by the group. Other traditions captured comprised of pictures of celebrations such as weddings, birthdays, family get-togethers, or friends eating foods. The group also photographed and labelled these activities as overindulgence as most socialisation included an abundance of food and drink. Specific activities photographed showed the preparation, cooking and eating of the food. In addition to barbecues, other social-

ising involved having coffee and sweets for morning and afternoon tea or getting together with friends. Weather was also included in this theme as it influenced the location of eating events, for example, barbecues typically occurred in the open air, and many of the cafes were outdoors.

Education

Education was likewise identified as a major theme. Photographs of scenes of healthy versus unhealthy foods, as well as pictures of cooking pans and preparation boards reflected what participants saw as encapsulating what they had learnt about food up till that point. The art and skill of cooking also was considered part of education as their abilities showed how, overtime, they had learnt to cook healthily. Education and learning about food was further related to and contributed towards feelings of guilt. As this young adult group became more knowledgeable of what healthy food versus unhealthy food was, they came to assess food in these terms — judging their food and additionally then judging themselves based on their food choice.

Accessibility

Accessibility was another theme that the photographs portrayed. Photographs of take away menus and fast-food restaurants were labelled as convenient and easy to access. Weather was again included as, for example, bad weather had led to unhealthy decisions to patronise take away and fast-food restaurants, while good weather facilitated being physically active and feeling motivated.

Photographs of watches and money were key images categorised within this theme of accessibility. Cheaper and often unhealthy food option was portrayed as the easily accessible and quick, convenient meals. Photographs of vending machines and food outlets on the



street emphasised the accessibility of these options.

Minor Themes — Exercise, Senses and Emotions

The three minor themes: Exercise; senses of sight, smell and taste; and emotional states of well-being were identified during group analysis.

Exercise was represented not only by photographs of running shoes and people exercising, but also features of the physical environment, such as footpaths, grassy parks, and exercise equipment. These were identified as cues that reminded the group of exercising and eating too much.

The theme of senses included photographs of flowers, food on the shelves, rainwater, and parkland to symbolise visual sense, smell, and taste. For the participants, these images represented a healthy lifestyle of eating the right foods and being physically active.

The final minor theme, emotions or states of being, was captured in photos of comfortable beds and lounge chairs, representing eating food for comfort and not exercising. The group interpreted these images as epitomising laziness and indulgence — a reflection of key personal feelings. There were also photos of photographs of desks of cluttered papers, or of the 'disorganisation' that denoted the need to purchase quick and easy meals.

Discussion

The aim of this study was to develop an understanding of the environmental influences on the food choices and eating behaviours of young adult females. The use of a combination of naturalistic and interpretive methods provided the means to investigate the participants' perception of influences on eating behaviour and food choice with reference to actual material reality, by capturing the meaning of places and features of their

own individual context through photograph. Environmental triggers were categorised into four major themes and three minor themes by participants. These themes represented substantial areas of the participants' lives and their everyday activities. The photographs provide a personal insight into this age groups' view of their physical environment.

The diversity of the photographs demonstrates the multiple influences of the external environment for eating cues. These range from media influences that are controlled externally to socially constructed and personal views of their environment that can be both internally controlled and externally influenced. A review by Cohen and Babey [11] into the contextual influences and cues on eating behaviours supports these findings, demonstrating the strong and often non-cognitive ways humans interact with and choose food. The roles of accessibility to food, as well as marketing, also identified in this study, appear to be strong factors within the food environment that act as cues to food choice — frequently unhealthy [11; 12]. The relationship between external cues and internal responses appears complex and needs to be better understood to inform public health interventions that alter dietary practices.

This study has a number of limitations. The use of university students being trained in health professions is a particularistic sample, whose perceptions are likely to be viewed through a health focused lens. As the sample included only women, future research should aim to include both genders and use comparative analysis to tease out key differences between how gender influences the interactions investigated within this study. The sample was also quite small limiting the ability to be confident about how well the results can be transferred to other similar population groups.

Conclusion

This study has provided insight into what a group of young women saw as environmental cues their eating behaviours. Identifying and understanding the key triggers (or cues), and the various environmental stimuli of certain eating behaviours, may contribute to a more nuanced approach to developing possible behavioural and environmental interventions to alter and enhance dietary practices of young adults. Prevention of diet related diseases and obesity is reliant on understanding and modifying the external environment to support better nutrition related practices.

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ВПЛИВ РАДИКАЛЬНОЇ ВАГІНАЛЬНОЇ ТРАХЕЛЕКТОМІЇ НА СТАН ОВАРІАЛЬНОГО РЕЗЕРВУ: СЕРІЙНІ ВИМІРЮВАННЯ В СИРОВАТЦІ КРОВІ РІВНЯ АНТИМЮЛЛЕРІВСЬКОГО ГОРМОНУ

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ВЛИЯНИЕ РАДИКАЛЬНОЙ ВАГИНАЛЬНОЙ ТРАХЕЛЕКТОМИИ НА СОСТОЯНИЕ ОВАРИАЛЬНОГО РЕЗЕРВА: СЕРИЙНЫЕ ИЗМЕРЕНИЯ В СЫВОРОТКЕ КРОВИ УРОВНЯ АНТИМЮЛЛЕРОВОГО ГОРМОНА

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Оценено влияние радикальной вагинальной трахелектомии (РВТ) с лапароскопической лимфаденэктомией на овариальный резерв и проведено сравнение ее с радикальной абдоминальной гистерэктомией (РАГ).

Согласно результатам исследования, уровень антимюллерового гормона (АМГ) у пациенток с РВТ был значительно выше, чем у пациенток с РАГ ($p < 0,05$), а уровень АМГ в группе пациенток после РАГ был значительно ниже, чем в контрольной группе ($p = 0,02$). Достоверных различий между уровнями АМГ в основной и контрольной группах не обнаружено.

Данные исследования показывают, что РВТ не оказывает влияния на функцию яичников и не снижает овариальный резерв. Уровень АМГ в сыворотке крови может быть использован в качестве критерия, определяющего овариальный резерв у женщин после РВТ.

Ключевые слова: радикальная вагинальная трахелектомия, антимюллеров гормон, рак шейки матки, репродукция, овариальный резерв.

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THE EFFECT OF VAGINAL RADICAL TRACHELECTOMY ON OVARIAN RESERVE: SERIAL CHANGES IN SERUM ANTI-MÜLLERIAN HORMONE LEVEL

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Aim. To evaluate the effect of vaginal radical trachelectomy with laparoscopic pelvic lymphadenectomy on ovarian reserve and compare it with abdominal radical hysterectomy.

Methods. We enrolled 18 women who had vaginal radical trachelectomy with laparoscopic pelvic lymphadenectomy and 16 patients who had abdominal radical hysterectomy for this study; 186 women were also included as a control group for comparison. The Mann-Whitney U test was used for comparison of patient characteristics and comparison of serum anti-Müllerian hormone levels between three groups.

Results. Serum anti-Müllerian hormone level in patients with vaginal radical trachelectomy were significantly higher than that of patients with abdominal radical hysterectomy ($p < 0,05$). Serum anti-Müllerian hormone levels in the abdominal radical hysterectomy group was significantly lower than that in the control group ($p = 0,02$), with no significant difference between the vaginal radical trachelectomy and control groups. These data indicated that vaginal radical trachelectomy did not affect ovarian function as for ovarian reserve.

Conclusions. Serum anti-Müllerian hormone levels could be useful as a marker of ovarian reserve after vaginal radical trachelectomy. It is important to avoid postoperative complications causing reduction in ovarian function to accomplish fertility-sparing surgery.

Key words: vaginal radical trachelectomy, anti-Müllerian hormone, cervical cancer, fertility, ovarian reserve.

