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# Encouraging Exercise Participation amongst UK South Asians: The Case of a Community Gym

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## ABSTRACT

Regular physical activity (PA) is recognised as playing a key role in promoting good health and tackling obesity. In many parts of the world there are concerns that people do not undertake sufficient PA, and that this problem is often worse for certain groups in the population. Low levels of PA amongst South Asian (SA) adults in the United Kingdom concern health policy makers and professionals because of the higher incidence of heart disease in this group than in the general population. Interventions have helped increase PA levels in white populations but have shown little success in engaging SA adults. One explanation is that interventions emphasise individual responsibility for health and pay relatively less attention to socio-cultural constraints on behaviour. Using qualitative, semi-structured interviews, we investigated influences on PA amongst 13 SA adults (aged 23-70) living in Halifax, Yorkshire, UK. The setting for our study was the participants' community gym. A key aim was to identify characteristics of the gym that influenced usage by the local SA population. We found the gym had successfully engaged SA adults in a programme of regular PA, and that a sense of its "embeddedness" in the local community was crucial to this. Implications for practice and research in health promotion and obesity prevention are discussed.

<Key-words>

physical activity, health-related exercise, ethnic minority, qualitative, support for exercise

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## I. Introduction

### 1. Ethnicity, obesity and physical activity

Throughout the industrialised world there is concern that many people do not engage in sufficient physical activity (PA) to attain well-established benefits (National Institute for Health and Clinical Excellence (NIHCE), 2006a; Statistics Canada, 2002; Ham et al. 2004). The need to promote PA is therefore enshrined in national public health policies and addressed through a wide range of interventions, including in the UK (NIHCE, 2006b), Japan (Yoshiike, Kaneda & Takimoto, 2002), Latin America (Kain, Hernández Cordero, Pineda et al, 2014) and Canada (Lau, Douketis, Morrison et al, 2007). In the United Kingdom, the Chief Medical Officer (CMO) published a report, 'At Least Five a Week', which sets out the strength of evidence to support the role of PA in disease prevention and management (U.K. Department of Health, 2004a). It recommends participation in moderate intensity exercise for 30 minutes a day on at least five days a week to protect against coronary heart disease (CHD).

Internationally, many ethnic minority groups are especially likely to fall well short of recommended levels of PA, particularly those living in deprived urban settings. For example, Bryan et al. (2006) found that in Canada only 34% of South Asian and 38% of Black minorities were achieving a moderate level of PA, compared to 49% of White people. Looking at physical activity amongst Asian-Americans, Becerra, Herring, Marshak and Banta (2015) found that Korean and Japanese women were especially likely to fall below recommended levels. In the UK, South Asian adults are less likely than their white counterparts to begin or maintain a programme of exercise or to meet current PA recommendations (Williams, 2010; BHF, 2009). This is of particular concern to public health policy makers and professionals because this minority shows a higher incidence of CHD than the general population.

In the UK, Government-funded initiatives have shown some success at increasing activity levels in older adults and have helped to establish evidence to support the delivery of government targets (Carnegie Research Institute, 2007; Local Exercise Action Pilots, 2007). However, they have shown little success in engaging South Asian populations (National Institute for Health and Clinical Excellence, 2007).

### 2. Explaining (non) participation in physical activity

Physical Activity interventions draw primarily on health behaviour change (HBC) theory, which provides a psycho-social framework for explaining why some individuals adopt healthy behaviours whilst others do not (Dishman, 1994; Niewenhuisen et al., 2006). HBC theories share a number of principal concepts/constructs including exercise attitude, social support for exercise and perceived behavioural control. Research provides

some support for the predictions made by HBC theories, including the role of positive attitudes to exercise (Rhodes, et al., 1999), and of social support (Chogahara et al, 1998). Despite the widespread use of these theories as the basis for PA interventions, the approach has been subject to important critiques. These focus above all on the individualism of the HBC explanation, which emphasises the volitional nature of human behaviour. The importance of the wider socio-cultural context is not denied, but it is seen in terms of extrinsic factors that influence personal choice. This contrasts with a more thoroughly social view that sees the person and their social world as deeply intertwined (Thurston, 2004; Wray, 2007).

Limitations in the way socio-cultural influences are conceptualised may be especially important when we are considering groups such as the South Asian minority, who may have a stronger sense of community identity than is generally the case for the white majority (Johnson, 2000; Jepson et al., 2008). Studies have found a strong influence on PA behaviour among South Asian populations from wider, socio-cultural factors (Carroll et al., 2002; Snape, 2005), and resistance to schemes adopting a top-down '*we plan, you participate*' philosophy (Bandesha and Litva, 2005).

### **3. The Community Gym study**

The present study focuses on users' experiences of a community gym set up in Halifax, West Yorkshire. This "Healthy Living Gym" is located in an inner city urban area with high levels of deprivation and a predominantly South Asian (largely Pakistani) population. It was founded and supported through the involvement of the West Central Halifax Healthy Living Partnership (WCHHLP), part of a national scheme. Funding for this study was provided by WCHHLP.

#### *Research Aims*

This study had two aims:

1. To explore the understandings of the relationship between PA and health amongst South Asian users of the Healthy Living Gym.
2. To identify characteristics of the Healthy Living Gym that influence the nature and extent of usage by the local South Asian population.

## **II. Subjects and Methods**

### **1. Overall design**

Given our emphasis on the views and experiences of participants in their social context, a qualitative approach was appropriate (Murphy et al., 1998). Data were collected using semi-structured interviews. Following consultation with the project managers, we

developed an interview guide that was used flexibly as a framework for exploring participants' views. Ethical approval was granted by the School of Human and Health Sciences research ethics panel, University of Huddersfield.

## 2. Sampling and recruitment

There were two stages to our sampling process. In the first we set out to recruit a cross-section of gym users in terms of age and gender. We used information sheets distributed by gym staff, and research team members visited the gym to make personal requests. In the second stage, following some preliminary analysis and in the light of WCHHLP priorities, we focused specifically on women over the age of 50. We were provided with a list of gym members from this demographic group, and obtained the services of a locally-based community researcher who assisted in recruitment. Finally, in order to gain an overview of how the gym functioned we interviewed three members of staff. Table one provides details of participants.

<Table 1> Participant details

Pseudonym	Age	Gender	Language	Mode
Samira	38	F	English	Face to face (not recorded)
Amina	57	F	English	Face to face
Atefa	23	F	English	Face to face
Habiba	37	F	English	Face to face
Dania	23	F	English	Telephone
Labib	49	M	English	Face to face
Sardar	51	M	English	Telephone (not recorded)
Akash	51	M	English	Telephone (not recorded)
Batool	62	F	Punjabi	Face to face
Bibi	70	F	Punjabi	Face to face
Khalida	52	F	Punjabi	Face to face
Malika	61	F	Punjabi	Face to face
Bushra	52	F	Punjabi	Face to face
Hannah (staff)	37	F	English	Face to face
Munera (staff)	21	F	English	Face to face
Kashifa (staff)	37	F	English	Face to face

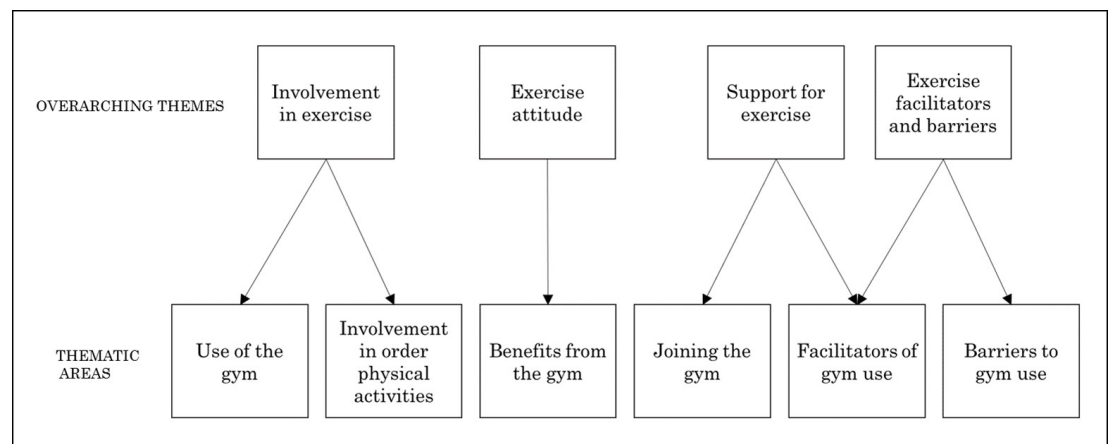
## 3. Interview procedure

Where possible, interviews were held in a quiet, private location within the building in which the gym is housed. One interview took place at the Health Centre, where the core staff for WCHHLP were based. In three cases interviews were carried out by telephone, at participants' request. Three interviews were recorded by hand with detailed notes. All others were audio-recorded and transcribed in full. All participants from the first part of the sample were interviewed in English, while all those in the second part were interviewed in Punjabi with the aid of an interpreter.

#### 4. Data analysis

Data were analysed thematically, using a version of the matrix technique (Nadin and Cassell, 2004). In this, the main thematic areas relevant to the research aims are identified on the basis of theoretical and/or pragmatic grounds and themes from each interview summarised under each thematic area heading, usually in tabular form with thematic areas as columns and cases as rows. These case by case matrices are typically condensed to highlight patterns of commonality and difference.

In the present study, the two-stage matrix analytic process resulted in the identification of eight thematic areas, each with between two and eight sub-themes. For the purposes of the present article, we condensed the thematic areas still further to focus closely on our aims here. Figure 1 illustrates the four overarching themes covered below, and their relationship to the original thematic areas.



<Figure 1> Thematic areas and overarching themes from the analysis

Throughout the analytical process, comparisons of independent coding between the two authors and a third colleague were carried out as a quality check (Mays and Pope, 2000). Preliminary analysis was also discussed critically with a steering group including members of the WCHHLP management, Gym staff and the community researcher.

### III. Results

#### 1. Involvement in exercise

The majority of interviewees said they were not currently involved in organised exercise outside the gym. Most said their main sources of exercise outside the gym were everyday activities such as housework and above all walking. Similarly, very few had had any systematic and regular involvement in exercise prior to joining the gym.

Regarding patterns of gym usage, most respondents said they attended the gym twice a week, and stayed for between an hour and two hours. Almost all liked to use a wide range of equipment on each visit, although many had a preference for cardiovascular machines (most commonly the treadmill) - described by Dania as machines that *“actually do something”*

## 2. Exercise attitude

We asked participants about the benefits they hoped to achieve as a result of joining the gym and those they had experienced through using the gym. Participants said they hoped using the gym would improve various conditions including arthritis/joint pain, diabetes, angina, back pain, high blood pressure and insomnia. Several referred to aspects of everyday physical functioning they hoped would benefit from joining the gym, such as walking and climbing the stairs. All three male participants, and the two youngest female participants (Dania and Atefa, both in their twenties) reported a desire to enhance their general levels of fitness. Anticipated psychosocial benefits were also cited as reasons for joining the gym. For example, Atefa wanted time for herself, away from child-care responsibilities:

*Now I've just had a baby again so it's my second child so this is my time out from him. So it's more psychol*

*ogical you know, my emotional and mental well-being as well as my physical (Atefa)*

All participants reported that using the gym was providing them with benefits regarding their health and well-being. Better management of, and reduced symptoms from, specific conditions were commonly reported by older participants. Khalida, for example, described improved management of her diabetes, while Labib referred to a reduction in breathlessness and lack of stamina associated with his angina:

Overall, it was the older participants in particular who believed that regular gym use had brought about welcome changes in terms of disease management and physical functioning. Most participants, particularly younger adults, described general feelings of increased overall fitness through using the gym such as having more energy and looking younger. Most also said they had lost weight. Some referred to longer-term health benefits:

*...if you get out and about and exercise yourself you keep yourself fit you won't be buried quickly, meaning that you won't be ill and be on a bed basically” (Bibi).*

Psychosocial benefits from using the gym were experienced by all participants. Several felt their mental health had improved and gave specific examples including relief from the stress and tension related to pressures in everyday life, improved mood, and being able to forget worries about health problems. All participants enjoyed meeting friends at the gym and in some cases making new friends too, although they varied in how important these aspects were to them.

### 3. Support for exercise

Participants had been encouraged to join the gym either by a health practitioner, a family member or a friend (or a combination of the three). Malika said her doctor advised her to join the gym, *"I have arthritis so my doctor say you go get exercise - little bit better – a little bit better. When you exercise you better"*. Dania's friends, who were already gym members, encouraged her to join: *"I knew quite a few people that were going to the Gym ...they were saying it's quite good for you, you know."*

All participants were positive about the support they received from gym staff (most of whom lived locally and spoke the participants' own language). As well as being friendly and approachable, gym instructors assisted participants in a variety of ways including checking blood pressure, providing guidance on the use of specific exercise machines, and devising personalised exercise programmes. They also gave advice on wider aspects of health such as diet and food preparation:

*... healthy eating as well because sometimes I tend to go eat wrong things, you know what I mean, they say 'plenty of water', you know, 'less of this less of that' you know - some good hints (Habiba)*

Most participants enjoyed meeting and interacting with other gym users. For some, particularly the older adult interviewees, this seemed to be important in increasing exercise confidence and motivation. As Labib explained, *"...doing exercise on your own, it's very difficult and when there's a few of you...it gives you more self-belief"*. Labib also said he found seeing men older than himself using the machines encouraged him to keep going. Dania said that without social interaction while using the equipment she would soon become bored:

*It just passes the time you know. I'm one of those I'm looking at the clock all the time, but if I've got someone to talk to my time flies. So I'd rather get on with the machines if there is someone to talk to next door [i.e. on neighbouring machine]*



Exercising together facilitated wider social support. Habiba, for instance, found that exercising with other members provided opportunities for wider support, “...*they're all quite close here as well, we share our problems and everything...and you see somebody who's got the same problem as you.*”

#### **4. Exercise facilitators and barriers**

A range of factors that facilitated or inhibited gym use emerged from our analysis. As one might expect, the location of the gym made it convenient for participants to attend. The fact that participants could walk to the gym was also useful and a necessity for most as few owned cars or were able to drive. Bibi said she could see the gym from her house and that this prompted her to attend: “*when I see the lights on, I thinks...right, it's on now, so I go across.*”

In addition to location, participants referred to other elements that facilitated their use of the gym including availability of women only sessions, timing of sessions, access to a variety of exercise equipment and being able to speak their own language. The affordability of sessions was frequently mentioned; all participants said they were happy with this aspect of the gym and particularly appreciated being able to pay per session as opposed to having to pay an annual membership fee.

Availability of women-only sessions in the morning meant that younger participants could fit exercise in with their children's schooling. The gym's proximity to the local school meant that Habiba could reach her children at short notice which she appeared to find re-assuring, “...*if I'm needed...you know – you can get there if you're needed.*” Dania liked the fact that gym sessions were available in the evening, as she could not attend during the day because she needed to look after her children who had not yet started school.

The most commonly reported barrier to exercise was lack of time due to work commitments, home and family responsibilities and social and religious obligations. Both Khalida and Malika said their work as shopkeepers kept them busy and prevented them using the gym more than twice a week. Childcare was a potential barrier to exercise for younger female participants, though this had been quite successfully addressed through the careful timetabling of sessions.

Some participants said visiting and entertaining friends and family members restricted involvement in exercise. There was a strong feeling amongst older female participants that it is customary to entertain family and friends and that reducing the amount of time and effort given to this activity in order to exercise would attract community censure:

*It's a lot to do with culture, when somebody comes to your house you look after them and feed them well. If you were going to come out to the gym they would say: "oh look at her, she's gone off to the gym wanting to be smart". That puts me off (Bibi)*

In terms of religious obligations, older participants in particular said they did not participate in organised exercise throughout the month of Ramadan or when they went to Hajj (pilgrimage to Mecca). However, the expectations of religion were not necessarily at odds with gym participation. Bibi said she hoped to go to Hajj later in the year and expected improvements in her general fitness from using the gym and from increased amounts of walking would help her to successfully complete the pilgrimage.

#### IV. Discussion

We will consider our findings in relation to the two aims of the study: how South Asian users of the Healthy Living Gym understood the relationship between PA and health, and the characteristics of the Healthy Living Gym that influenced the nature and extent of its usage.

##### 1. Understanding of the relationship between PA and health

Some previous studies have found that South Asians were limited in the extent to which they understood and valued the health and wellbeing benefits of exercise (U.K. Department of Health, 2004b; Lawton et al., 2006). This was not the case with the Healthy Living Gym users we interviewed. They were clearly aware that regular exercise at the gym could lead to improvements in specific conditions and to enhanced general levels of fitness. Though less evident, there was at least some awareness of the longer term preventative health benefits of PA. Our participants also understood that this form of organised PA could have psychological and social benefits, and for some these were important factors in maintaining active membership of the gym.

When we consider why our participants showed this kind of understanding and valuing of exercise, we must bear in mind that they were selected as existing users of the gym. Perhaps at the point they joined they were already more receptive than others in their community to the message of the link between PA and health? The nature of our data does not enable us to directly examine this possibility, but it is worth noting that their responses regarding prior involvement in exercise do not suggest that they were unusually committed to PA before attending the Healthy Living Gym. However typical or atypical our sample was, it is clear that the involvement of gym staff was key to developing users' understanding regarding health and exercise. They used their "insider"

status as members of the community to deliver important messages relating to health and wellbeing, while also providing friendly and practical advice and support relating to activity in the gym. Similar to findings reported in other studies, social interaction amongst users also appears to have been important in sharing understanding (Jepson et al., 2008).

## **2. Explaining usage of the Healthy Living Gym**

Our findings suggest three broad characteristics of the Healthy Living Gym that helped to encourage its use by members of the local South Asian population. These were: the support provided to users; the cultural appropriateness of the facility; and practical matters of cost and location. Turning first to support, this was important both in encouraging people to join the gym and in motivating them to maintain regular attendance. Because the gym was part of the wider health improvement initiative of WCHHLP, it had quite a high profile amongst local family doctors (GPs) and other health professionals, who played a part in prompting some participants to try the gym in the first place. Encouragement from friends and family was also important, especially recommendations from those who were already using it.

There was a strong feeling amongst those we interviewed that support from staff was important in developing members' confidence and motivation to maintain current levels of PA. Another significant positive influence for the majority of our participants was the facilitating effect of exercising alongside others. For female participants in particular, the group setting offered opportunities for mutual support that extended beyond exercise participation. This indicates a potential for social interaction to function both as a valued benefit of and key support mechanism for exercise.

The cultural appropriateness of the Healthy Living Gym mattered to our participants, especially with regard to the provision of single-sex sessions. The fact that the gym staff came from the community and spoke the languages used there was also helpful, which is something other studies have found to be important in facilitating exercise adherence amongst South Asian communities (Jepson et al., 2008; Allender, 2006). However, none of the users we interviewed suggested that cultural issues were of over-riding importance in their choice to use the Healthy Living Gym. While recognising their distinctiveness, we should be careful not to over-state how this particular ethnic minority population differs from other groups. As with any other deprived urban community, practical issues of cost and location were significant issues for them; that the gym was cheap and could be accessed on foot was as pertinent as the attention paid to cultural issues.

### 3. Implications for practice and research

Our study suggests that the Healthy Living Gym was very successful in encouraging the local South Asian community to engage in regular PA, and in enhancing their understanding of the links between exercise and health and wellbeing. Alongside evidence from previous research such as that of Snape (2005), there are lessons here for others considering PA interventions for deprived urban ethnic minority populations. We would sum up the reasons for the gym's success principally in terms of its *embeddedness* in the local community. This refers to a strong sense of the gym as part of the community, staffed by local people, physically accessible and run in a way that is tailored to the lives of its users. The users themselves became advocates for the gym in the community, which is something that other schemes could actively seek to encourage. Despite the success of the Healthy Living Gym, there remain challenges in encouraging the population it serves to improve health and wellbeing through PA. Most notably, our research showed that involvement in the gym was not (as yet) motivating participants to engage in more PA outside of it. One strategy to address this could be to attempt to use the successful "brand" of the intervention (in our case, the Healthy Living Gym) to market other activities in the community, ideally employing the familiar and trusted staff.

Regarding future research and evaluation in this area, we would make two main recommendations. First, there is the need for larger scale multi-method studies, measuring the impact of interventions on key aspects of health and wellbeing, while also using in-depth qualitative methods to make sense of the meanings associated with exercise activities in specific community contexts. Second, we would like to see longitudinal studies that can trace individual and community changes from before an intervention starts through to long-term implementation.

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## References

- 1) Allender, S., Cowburn, G., & Foster, C. (2006) Understanding participation in sport and physical activity among children and adults: a review of qualitative studies. *Health Education Research: Theory & Practice*, 21, 826-835.
- 2) Bandesha, G., & Litva, A. (2005) Perceptions of community participation and health gain in a community project for the South Asian population: a qualitative study. *Journal of Public Health*, 27, 241-245.
- 3) Becerra, M.B., Herring, P., Marshal, H.H. & Banta, J.E. (2015) Social determinants of physical activity amongst adult Asian-Americans: results from a population-based survey in California. *Journal of Immigrant Minority Health*, 17, 1061-1069.
- 4) BHF National Centre for Physical Activity and Health. (2009) *How to Engage Inactive Communities in PA: Top tips from the BHFNC 8<sup>th</sup> Annual Conference* [online]. Available at: <http://www.bhfactive.org.uk/homepage-resources-and-publications-item/92/index.html> [Accessed December 2010].
- 5) Bryan, S.N., Tremblay, M.S., Pérez, C.E., Ardern, C.I., & Katzmarzyk, P.T. (2006) Physical activity and ethnicity: evidence from the Canadian Community Health Survey. *Can J Public Health*, 97(4), 271–276.
- 6) Carnegie Research Institute. (2007) *The National Evaluation of LEAP: Final report on the national evaluation of the Local Exercise Action Pilots*. Leeds: Carnegie Research Institute.
- 7) Carroll, R., Ali, N., & Azam, N. (2002) Promoting physical activity in South Asian Muslim women through 'exercise on prescription'. *Health Technology Assess*, 6.
- 8) Chogahara, M., Obrien, S., Cousins, S. & Wankel, L. (1998) Social Influences on Physical Activity in Older Adults: A Review. *Journal of Ageing and Physical Activity*, 6, 1-17.
- 9) Dishman, R. (1994). *Advances in Exercise Adherence*. Champagne: Human Kinetics.
- 10) Ham, S., Yore, J., Fulton, J., & Kohl, H. (2004) Prevalence of no leisure-time physical activity – 35 states and the District of Columbia 1988-2002. *Morbidity and Mortality Weekly Reports*, 53, 82-86.
- 11) Jepson, R., Avan, G., Bowes, A., Harris, F., Robertson, R., & Sheikh, A. (2008) *Physical activity and black and minority ethnic groups: a qualitative study of South Asian people living in Scotland*. Edinburgh: NHS Health Scotland. Available at: [http://www.healthscotland.com/uploads/documents/8716-Physical%20Activity%20and%20BME%20groups%20\(2\).pdf](http://www.healthscotland.com/uploads/documents/8716-Physical%20Activity%20and%20BME%20groups%20(2).pdf) [Accessed December 2010]
- 12) Johnson, M. (2000) Perceptions of Barriers to Healthy Physical Activity among Asian Communities. *Sport, Education and Society*, 5, 51-70.

- 13) Kain, J., Hernández Cordero, S., Pineda, D., de Moraes, A.F., Antiporta, D., Costa de Oliveira Forkert, E. et al. (2014) Obesity prevention in Latin America. *Current Obesity Reports*, 3, 150-155.
- 14) Lau, D.C.W., Douketis, J.D., Morrison, K.M., Hramiak, I.M., Sharma, A.M., Ur, E. et al. (2007) 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children [summary]. *Canadian Medical Association Journal*, 176 (8: S1-13).
- 15) Lawton, J., Ahmed, N., Hanna, L., Douglas, M. & Hallowell, N. (2006) 'I can't do any serious exercise', barriers to physical activity amongst people of Pakistani and Indian origin with Type 2 diabetes. *Health Education Research: Theory and Practice*, 21, 43-54.
- 16) Local Exercise Action Pilots (2007) *The National Evaluation of LEAP: Final Report on the National Evaluation of the Local Exercise Activity Pilots*. Leeds Metropolitan University: Carnegie Research Institute.
- 17) Mays, N., & Pope, C. (2000) Assessing quality in qualitative research. *British Medical Journal*, 320, 50-52.
- 18) Murphy, E., Dingwall, R., Greatbatch, D., Parker, S., & Watson P. (1998) Qualitative research methods in health technology assessment: A review of the literature. *Health Technology Assessment*, 12, 16.
- 19) Nadin, S., & Cassell, C. (2004) Using data matrices: In Cassell, C., & Symon, G (eds). *Essential guide to qualitative methods in organizational research*. London: Sage.
- 20) National Institute for Health and Clinical Excellence. (2006a) *Promotion of Physical activity among adults: Evidence into practice briefing* [online]. London: National Institute for Clinical Excellence. Available at: <http://www.nice.org.uk/page.aspx?o=299207> [Accessed January 2007].
- 21) National Institute for Health and Clinical Excellence. (2006b) *Four commonly used methods to increase physical activity*. London: National Institute for Health and Clinical Excellence. Available at: [http://www.nice.org.uk/nicemedia/pdf/PH002\\_physical\\_activity.pdf](http://www.nice.org.uk/nicemedia/pdf/PH002_physical_activity.pdf) [accessed December 2010].
- 22) National Institute for Health and Clinical Excellence. (2007) *Public health guidance 6: Generic and specific interventions to support attitude and behaviour change at population and community levels* [online]. National Institute for Clinical Excellence. Available at: <http://www.nice.org.uk/nicemedia/pdf/PH006guidance.pdf> [Accessed September 2007].
- 23) Niewenhuisen, E., Zemper, E., Miner, R. & Epstein, M. (2006) Health behaviour change models and theories: contributions to rehabilitation. *Disability and Rehabilitation*, 28, 245-56.

- 24) Rhodes, R., Martin, A., Taunton, J., Rhodes, E., Donnelly, M. & Eliot, J. (1999) Factors Associated with Exercise Adherence Among Older Adults: An Individual Perspective. *Sports Medicine*, 28, 397-411.
- 25) Snape, R. (2005) Steps to Health: an evaluation of a project to promote exercise and physical activity amongst Asian women in a post-industrial town in England. *Managing Leisure*, 10, 145-155.
- 26) Statistics Canada. (2002) *Canadian Community Health Survey 2000/1*. Available at: <http://www.statcan.gc.ca/daily-quotidien/020508/dq020508a-eng.htm> [Accessed November 2010].
- 27) Thurston, M., & Green, K. (2004) Adherence to exercise in later life: how can exercise on prescription programmes be made more effective? *Health Promotion International*, 19, 379-387.
- 28) U.K. Department of Health. (2004b) *Heart Disease and South Asians: Delivering the National Service Framework for Coronary Heart Disease* [online] London: DoH. Available at: [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4102918.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4102918.pdf) [Accessed 15<sup>th</sup> September 2006].
- 29) U.K. DoH. (2004a) *At Least Five Times a Week: Evidence on the impact of physical activity and its relationship to health, a report from the Chief Medical Office*. London: DoH.
- 30) Williams, E., Stamatakis, E., Chandola, T., & Hamer, M. (2010) Assessment of physical activity levels in South Asians in the UK: findings from the Health Survey for England. *J Epidemiol Community Health*, Available at: <http://jech.bmj.com/content/early/2010/06/04/jech.2009.102509.abstract> [Accessed November 2010].
- 31) Wray, S. (2007) Health, Exercise, and Well-Being: The Experiences of Midlife Women from Diverse Ethnic Backgrounds. *Social Theory and Health*, 5, 126-144.
- 32) Yoshiike, N., Kaneda, F. & Takimoto, H. (2002) Epidemiology of obesity and public health strategies for its control in Japan. *Asia Pacific Journal of Clinical Nutrition*, 11 (s8), S727-S731.

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VOL.12 April 2017

*CONTENTS*

ORIGINAL ARTICLES

---

Associations among the Nutritional Status and Mental/Physical Functions of Care-dependent Individuals Living in Residential Homes for the Elderly

Yuko FUJIO, et al. 1

---

A Survey on International Nursing Education of National Universities in Japan

Akina ISHIBASHI, et al. 8

---

Academic Qualification and Job Market Placement: A Bangladesh Study

Rajib Ahmed FAISAL, 17

---

The Influence of Living Environment on Independence level of Special Nursing Home

Yukie ENOMOTO, et al. 30

---

Encouraging Exercise Participation amongst UK South Asians:  
The Case of a Community Gym

Nigel KING, et al. 46

---

Promoting Wellbeing:  
Amylase as an Indication of Changes in Stress level in People with Intellectual Disabilities

Nigel A. MARSHALL, et al. 60

---

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