2011

The impact of online social participation on social capital and mental health outcomes of young adults: A systematic review & participation and quality of life of young adults living in Western Australia: Research report

Robyn Earl
Edith Cowan University

Edith Cowan University

Copyright Warning

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

COPYRIGHT AND ACCESS DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;

(ii) contain any material previously published or written by another person except where due reference is made in the text; or

(iii) contain any defamatory material.

Signed…  ……..

Date……15.12.11……

The Impact of Online Social Participation on Social Capital and Mental Health Outcomes of Young Adults: A Systematic Review.

&

Participation and Quality of Life of Young Adults Living in Western Australia: Research Report

Robyn Earl

A report submitted in partial fulfilment of the requirements for the award of Bachelor of Occupational Therapy, Honours, Faculty of Computing, Health and Science.

Edith Cowan University

In Conjunction with
Telethon Institute of Child Health Research

Submitted: October 2011

I declare that this written assignment is my own work and does not include:
(i) material from published sources used without the proper acknowledgement, or,
(ii) material copied from the work of other students

Signature: _____
Date: _____

Declaration

I certify that this literature review and research project does not incorporate without my acknowledgement, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material previously published or written

Signature: _____

Date: _____

Acknowledgements

I would like to acknowledge my supervisors, Dr. Sonya Girdler, Ms. Kitty Foley and Dr. Helen Leonard for their endless support and guidance.

I would like to thank my family for all their support.

&

Finally, I would like to acknowledge Edith Cowan University for their financial support and the staff at the Telethon Institute of Child Health Research for all their help.

Table of Contents

The Impact of Online Social Participation on Social Capital and Mental Health Outcomes of Young Adults: A Systematic Review.

Robyn Earl

Edith Cowan University

In Conjunction with
Telethon Institute of Child Health Research

Abstract

Introduction: The widespread acceptance and availability of the Internet and subsequent advent of social networking sites, is believed, in part, to be responsible for the reduction of face-to-face interaction, particularly among young adults. This has lead to suggestions that while virtual participation may enhance our ability to communicate with others; it may in fact come at the detriment of wellbeing. Depression is one of the leading causes of mental illness for young people, with social isolation and exclusion being identified as key risk factors for depression among this group. The aim of this review was to systematically review available research examining the relation between online social participation and the psychological wellbeing of young adults. **Methodology:** Electronic searches of five electronic databases (ERIC, PsycINFO, Scopus and Web of Science) were used to identify and locate studies for inclusion in this review. Each database was searched for studies conducted since 2000 to May 2011. **Results:** Seven articles met the inclusion criteria, with a total of 4 190 participants. Of the seven studies four were cross sectional surveys, two were non-experimental pre-test post-test studies and one was a longitudinal study. **Conclusion:** This review found significant evidence to suggest that greater time spent in online chat was associated with increased feelings of loneliness post social exclusion. Social networking sites were not found to facilitate strong bonds between individuals, but rather complement to face-to-face interaction. Social networking sites do potentially provide powerful networking tools that individuals can turn to in times of need.

Key Words: social capital, social network, Facebook, internet use, young adult, online and internet.

Author: Robyn Earl
Supervisors: Dr. Sonya Girdler
Ms. Kitty Foley
Dr. Helen Leonard
Submitted: October 2011

Introduction

In recent years there has been a growing interest in what it is that allows individuals to create and maintain social relationships with others. This has in part been due to a significant shift in the mode of developing and maintaining social relationships. It has been suggested that the widespread acceptance and availability of the Internet and subsequent advent of social networking sites, is in part responsible for the reduction of face-to-face interaction and the increase in distance communication (1-4). This has lead many researchers to suggest that while virtual participation may enhance our ability to communicate with others globally, it may in fact come at the detriment of wellbeing.

By far the biggest consumers of online social participation medias are young adults aged 18-34 (5). Young adults also have the highest prevalence of mental illness of any age group (6-8). Depression is one of the leading causes of mental illness for young people (8, 9), with social isolation and exclusion being identified as key risk factors for depression among this group (10). Socially anxious individual's with co morbid depression have an increased likelihood of recurrent depressive symptoms throughout their lives and are more likely to suicide (9). Further more, Cacioppo (2003) reported that socially isolated young adults had poorer physical health outcomes compared to their socially engaged peers which was shown to lead to further psychological stressors (11).

The importance of meaningful and intimate social relationships for young adults is widely recognised (12-15). However, many young adults find it challenging to make these meaningful connections with others for a number of reasons including distance,

disabilty, minority status, and personal preference. Early research examining the relationship between time spent online and mental health outcomes suggested that greater usage was associated with poorer psychological outcomes (1, 2). It was hypothesised that this relationship was the result of time being spent online at the expense of participation in meaningful social interactions with close friends and family, and the belief that on-line relationships were less emotionally satisfying and distant (1, 2, 16).

The quality of social relationships between individuals and groups is commonly referred to as social capital. Social capital is conceptualised as the resources that are invested into and produced by social networks, and their value for both individuals and groups (15-17). Two forms of social capital measure the social ties between individuals and informal groups. The first is bonding, which refers to the strong ties between individuals, such as family and close friends (16, 17). The second form is bridging, which refers to the weaker, but further reaching ties between individuals and groups, such as the ties between casual acquaintances and work associates (16, 17). The fear that many have expressed is that time spent on the Internet leads to a sacrifice of bonding social capital in favour of bridging, potentially resulting in less emotionally and psychologically satisfying social engagement (1, 2, 4, 15-17). It is argued that those individuals who have strong social ties with others are more able to turn to and rely on their peers in times of crisis than those with weaker, less familiar ties (1, 2, 4, 15-17). Social connectedness is believed to be particularly important during young adulthood as it is during this time that many major life events occur, which potentially lead to increased psychological distress (8, 10, 12-14). However, it has also been argued that online social participation may contribute to the

development and maintenance of meaningful relationships that would not otherwise be possible without Internet social forums (1-3).

As virtual social participation becomes an increasingly popular and integral part of mainstream culture, in parallel with increasing rates of depression and anxiety, many researchers have been lead to explore whether a link exists between the online social participation trends and the mental health of young adults. To date much of the data is conflicting as to whether online social participation indeed facilitates greater social capital and improved psychological wellbeing. Therefore, the aim of this review was to systematically review available research examining the relation between online social participation and the psychological wellbeing of young adults.

Methods

Electronic searches of five electronic databases (ERIC, PsycINFO, Scopus and Web of Science) were used to identify and locate studies for inclusion in this review. Each database was searched for studies conducted since 2000 to May 2011. The key search terms were social capital, social network, Facebook, internet use, young adult, online and internet. Terms were truncated, exploded and adjusted to match the specific database being searched with the assistance of the librarian. Only published literature was accepted with no language, or study design restrictions. Reference lists of included studies were also reviewed manually for other relevant studies.

Studies were assessed for suitability initially by title and secondly by abstract. Articles were finally assessed for suitability based on review of full text articles. Studies were included if they described the type and degree of online social networking sites and the outcomes for young adults mental health.

Assessment of Methodological Quality

Each study was assessed by two independent reviewers for quality using the form developed by Kmet et al. to evaluate the quality of quantitative studies (18). The checklist consists of 14 questions to assess the quality of included studies. Quality of the studies were defined using a calculated score; strong (>80%), good (70-80%), adequate (50-70%), or limited (<50%). Differences in scores between reviewers will be resolved through discussion and possible review by a third reviewer.

Data Extraction

Data was extracted by two independent reviewers according to the methods laid out in section seven of the *Cochrane Handbook for Systematic Reviews of Interventions* (19). Data extracted included; study design, study objective, sample size, method of recruitment, characteristics of participants, outcomes, analytical methods, confounding controls, results and conclusion. Discrepancies in reviewers' findings were resolved via discussion.

Results

Electronic searches located 43 articles from Scopus and 16 from Web of Science 1 from EBSCO. After accounting for duplicates a total of 51 titles were included for review. A further 33 articles were excluded on title and two others were excluded by abstract review. Full texts of the remaining 16 articles were reviewed for inclusion.

Of the 16 articles a total of seven met the inclusion criteria, reporting on social networking sites or instant online chat with a total of 4 190 participants. Of the seven studies four were cross sectional surveys, two were non-experimental pre-test post-test studies and one was a longitudinal study. In the cross sectional studies effect of

online chat on psychological wellbeing was reported in three (20-22). The forth explored the relationship between online social participation using Facebook, on self esteem and the generation of bridging social capital (23).

Included in the review were two non-experimental pre-test post-test studies. Feelings of social isolation and loneliness were induced in participants, in order to explore whether instant chat was able to alleviate of minimise these feelings in a young adult population (24, 25). The final study evaluated, longitudinally, the influence of Facebook on young adults psychological wellbeing and social capital over a two year period (26).

Quality of Studies

Overall the methodological quality of the studies was found to be adequate to strong. The cross sectional nature of four of the seven studies limited their overall quality however the researches sought to control for confounding factors where possible (20-23). All of these researchers acknowledged that more rigorous experimental designs were required. The longitudinal study was of a very high quality study with the authors rigorously accounting for possible confounding factors (26). The pre-test post-test studies had strong methodological quality however they were limited in that they did not entirely account for confounding factors (24, 25).

Exposure/s

The intention of this review was to explore the effect of two forms of online social participation; social networking sites and online chat. Five articles explored the effect of exposure online chat participation. Three of the studies examined the relationship between online chat and social wellbeing, in particular levels of loneliness and social

anxiety (20-22). Two studies used a pre-test post-test design to examine whether online chat had a direct impact on alleviating psychological distress in young adults (24, 25). Two studies investigated the relationship between exposure to social networking sites (Facebook and Myspace) and life satisfaction (23, 26).

On-line Chat as an Intervention

Two studies explored the degree to which online chat impacted on feelings of social isolation and loneliness. Gross (2009), used a control group who participated in solitary game play, while those allocated to the "chat" intervention group were assigned a chat partner who was of the opposite sex and unfamiliar to them. Hu (2009), explored the degree to which various activities alleviated mood loneliness. Participants were assigned to one of five situations; face to face chat, online chat, watching a video, doing homework, and doing nothing. Pre and post-test measures of loneliness were taken and the results were compared.

Outcomes

Psychological wellbeing was the primary outcome examined in this review, with five of the seven studies reporting on the potential influence of online chat on this outcome. The pre-test post-test studies by Gross (2009) and Hu (2009), examined if online chat alleviated negative feelings, particularly loneliness and anxiety, associated with social exclusion in comparison to a control group (24, 25). Measures included the UCLA Loneliness Scale, the Social and Emotional Loneliness Scale for Adults. Both studies found that online chat did not alleviate the negative affects of social exclusion any more than face-to-face chat. Three cross-sectional surveys also reported on the potential influence of online chat on young adult mental health (20-22). These studies used a variety of tools to measure the participant's loneliness,

social anxiety, self esteem, including the UCLA Loneliness Scale, the Social and Emotional Loneliness Scale for Adults.

The five studies that reported on the psychological outcomes of online chat had mixed results. Hu (2009) reported that online chat lead to increased feelings of loneliness (25). Gross (2009) however found that post social exclusion, participating in online chat with an unknown peer lead to a greater replenishment of self esteem than participating in solitary game play (24). However, for young adults, online chat did not lead to a reduction in the negative affective experiences associated with social exclusion (dysphoria, shame or anxiety) (24). Kang (2007), found that greater online chat was predictive of lower depression scores (27). However, Kang did not report the degree to which this was true for the young adults, as older generation users reported increased "happiness" in comparison to younger users (27). Conversely, Kang reported that online chat users with higher education had smaller social networks, experienced greater alienation and felt as though they had fewer people to rely on. Further more, those who spent greater time participating in online chat were reported to be less estranged from others (27). Moody (2001) found those who relied more on their online friendships reported higher levels of emotional loneliness, compared to those who relied more on their offline friendships (22). However, in the same study greater Internet use was associated with decreased social loneliness (22). Moody concluded that the impact of online social participation on emotional wellbeing is complex and highly variable (22).

Two studies investigated the potential relationship between social networking sites and psychological wellbeing (26, 28). Both studies measured psychological

wellbeing using the Satisfaction with Life Scale (29). Steinfield, Ellison, and Lampe (2008) used Rosenberg's Self Esteem Scale (30). Facebook use and intensity was measured by the tool developed by Ellison (31). Facebook use was found to have a positive influence on psychological wellbeing of young adults who did not place a high value on their online relationships, but rather viewed them as opportunities for future benefit such as job opportunities or "favours" (26). Those who placed a high value on their online relationships were more likely have lower self-esteem compared to others who did not (23, 26). Steinfield examined the relationship between social networking sites, self-esteem and bridging self capital. Facebook was reported to be an effective and potentially powerful means by which to build bridging social capital, allowing for easy maintenance of loose social ties between casual acquaintances. Collecitvely this research suggests that Facebook is a network of loose ties between individuals, which has positive psychological outcomes for those who *already* have high levels of civic engagement (26, 28).

Table 1: *Description of Included Studies*

StudyID	Study design n (participants), mean age (years)	Online Exposure (1=chat, 2=SNS)	Measure/s of well being	Outcome/s	Main Findings	Quality of internet use measure/s (Kmet et al. 2004)
Matsuba2006	Cross sectional n=203 20.5 (4.1)	1	UCLA Loneliness Scale v 3 Self-concept Clarity	Problematic Internet use (PIU) symptoms positively related to communication r=0.50, p<0.001 Those individuals who had online relationships had more PIU symptoms (M=3.22, SD=2.62) than those who had no online relationships (M=1.36, SD=1.78)	Loneliness was positively associated with chat room use PIU symptoms were positively associated with online chat room use and instant messaging.	86.36%
Gross2009	pre-test post test n=60 18.4 (0.9)	1	Question "how are you feeling now?" 21 item asking about emotions	Online chat improved self-esteem in young adults p<0.05. Online chat alleviated feelings of dysphoria, p<0.01, shame, p<0.01 and anger, p<0.01.	Instant chat facilitated greater replenishment of self-esteem post social exclusion but did not alleviate all the negative affects of social isolation in young adults.	80.77%

Hu2009	pre-test post test n=234 21.50 (1.80)	1	UCLA Loneliness Scale v 3 Social and emotional loneliness scale for adults	There was difference between the computer mediated communication (CMC) in reducing loneliness *p>0.05* Increase mood loneliness was experienced after CMC *p<0.05* No significance between social versus non-social activities in reducing mood loneliness for people with either high or low trait loneliness (HTL:F(1, 57)=0.00,*p>0.05;* LTL:F(1, 51)=0.33, *p>0.05)* For participants with low trait loneliness (LTL) there was no significant difference btw F-t-f and CMC F(1,28)=0.02 *p>0.05* For participants with HTL f-t-f reduced mood loneliness (-0.04, SD=0.20) CMC increased mood loneliness (0.12, SD=0.20) post social exclusion	Computer mediated communication (online chat) does not alleviate loneliness. For individuals predisposed to feelings of loneliness online chat potentially increases feelings of loneliness compared to face-to-face communication. Face to face communication reduced feelings of loneliness in predisposed participants.	87.50%

Mazalin2004	cross sectional n=161 19.13 (1.70)	1	Extended Objective Measure of Ego Identity Status Liebowitz Social Anxiety Scale: Self report version	**Correlation between online chat room use and;** Loneliness *p<0.05* Pathological Internet use symptoms (PUI) *p<0.01* Self-concept clarity (SCC) *p>0.05* **Correlation between online instant messaging use and;** Loneliness *p>0.05* Pathological Internet use symptoms (PUI) *p<0.01* Self-concept clarity (SCC) *p<0.05* **Correlation between interacting with strangers online and;** Self-concept clarity (SCC) *p<0.05* **P scores for real-life versus online friendship quality dimensions** Companionship *p<0.01* Instrumental aid *p<0.01* Satisfaction *p<0.01* Intimacy *p<0.01* Nuturance *p<0.01* Affection *p<0.01* Reliable alliance *p<0.01*	Face-to-face relation ships were rated to be of greater importance and value than online ones. Online chat whether with an individual or group was related to increase feelings of loneliness. Participants with poor identity development are more likely to use the internet for a variety of uses including online chat. Participants who were very lonely were more likely to use the internet to meet and interact with people than those who were not. Participants with a less developed sense of self were more likely to use online chat. As well as this they were more likely to have multiple online personas suggesting that they were more likely to use the Internet to "experiment" with different "versions" of themselves in order to better establish a sense of identity.	77.27%
Moody2001	cross sectional, 166, 19.2	1	Social and emotional loneliness scale for adults Social Anxiety Subscale of the Self Consciousness	Large f-t-f network was associated with lower social loneliness p<0.0001 and lower emotional loneliness p=0.0016 Those who relied more on online friends had greater levels of emotional loneliness p=0.0370	High levels of Internet use were associated with low levels of social loneliness and high levels of emotional loneliness. Low levels of social and emotional loneliness were both associated with high degrees of f-t-f networks of	63.64%

			Scale		friends.	
Steinfeild2008	longitudinal study n=763	2	Rosenberg Self-Esteem Scale (30) Satisfaction with life scale (29)	Significance was not reached for correlations between social anxiety identity status and Internet use for females. **Correlation between social anxiety, identity status and Internet use for males** Social Anxiety and online chat p<*0.01* Online chat and poor identity development (diffusion or forclosure) *p<0.01*	Males who reported higher levels of social anxiety and less mature identity development were more likely to spend time in online chat rooms.	90.91%
Valenzuela2009	cross sectional n=2603 20.88 (0.88)	2	Satisfaction with life scale (29)	**Differences between Facebook members and non-members** Life satisfaction *t=-0.95, n.s.* Social trust *t=0.39, n.s.* Civic Engagement *t=-6.31, p<0.001* **Intensity of Facebook use as a predictor of:** Life Satisfaction *p<0.001* Social Trust *p<0.001* Civic participation *p<0.001* **Intensity of Facebook group use as a predictor of:** Civic participation *p<0.05*	Positive relationships were found between intensity of Facebook use and participants' life satisfaction, social trust and civic engagement. Small associations between Facebook variables and social capital suggests that social networking sites are not the most effective solution to youth social disengagement.	86.36%

Discussion

Online Chat

In summary this review found significant evidence to support the conclusion that greater time spent in online chat is associated with increased feelings of loneliness post social exclusion in those with a predisposition towards loneliness. Collectively research suggests that the online chat may be limited in its utility as an intervention for social exclusion and its negative effects. This finding highlights that there is a need for young adults to be more aware of the link between time spent on line participating socially and increased social anxiety and isolation, and as such should be promoted in the media and by health professionals. Young adults should be encouraged to actively participate in face-to-face, offline social interactions to ensure healthy psychological wellbeing.

This review is limited in the degree to which it can comment on the effectiveness of online chat on the psychological wellbeing of clinical populations of young adult's as studies were limited to non-clinical sample groups. Future research should examine the effectiveness of online chat as an intervention for alleviating social isolation and anxiety in clinical populations.

It is also important to note the findings by Kang (2007), who reported that those of higher education were more likely to have poor outcomes in regards to social alienation. This suggests that findings from current research may be limited as a result of the tendency for researchers to recruit samples from universities and colleges. Kang's suggestion that education may be a confounding variable that should

be considered in future research examining the effectiveness of online chat in alleviating loneliness, social isolation and anxiety.

Alternatively, the negative psychological outcomes associated with online chat use may be as a result of the displacement of time spent "offline" creating strong social ties, or bonding social capital. This displacement of strong social ties in favour of weaker ties may potentially lead to decreased wellbeing and greater social isolation (2, 3, 16, 26, 28, 31). Putnam, suggested as individuals make time for new technologies in their lives, time spent participating in society is ultimately decreased (16). This is further supported by Matsuba, 2006, who found a relationship between time spent online, loneliness and problematic Internet use (20). Additionally, those who place a high value on their online relationships are more likely to experience feelings of loneliness and have poorer identity development (21). These results further support the notion that health professionals should encourage young adults to actively make time to socially participate offline. Particularly those who are presenting with increased mood loneliness and potential early/ mild signs of depression.

Social Networking Sites

The review also found that online social networking sites do not necessarily facilitate strong bonds between individuals, but rather provide a complement to face-to-face interaction. Social networking sites do potentially provide powerful networking tools that individuals can turn to in times of need. However, it is important to note that those who benefit the greatest from social networking sites are those who are already highly socially engaged. As social networking sites become a more entrenched part of social culture it is important that individuals continue to maintain strong social ties

beyond the virtual realm so as to maintain their psychological wellbeing. These findings suggest that social networking sites may complement interventions addressing the effects of social isolation/ anxiety however should not take the place of face-to-face interaction.

More research is needed to further understand the impact of new technologies on the psychological well being of adults over time. This review showed that mode of online participation and time spent participating online were factors in determining psychological outcomes of young adults. Those who rely heavily on online participation had, on the whole, poorer psychological outcomes. Further more, the findings of the studies indicated mixed outcomes for those with mild psychological wellbeing concerns, further rigorous investigation with clinical and non-clinical populations is required before conclusions regarding the potential impact of online chat for moderate to severe mental illnesses are made. Additional high quality research is required to investigate the impact of social networking sites on clinical populations, accounting for past and present online participation usage. Studies should also account for immediate effects on wellbeing versus long-term effects so as to account for the influence of social capital and potential growth over time. Finally, as the Internet becomes increasingly popular and relied on by mainstream culture further research should aim to tease out the links between psychological wellbeing, modes of online participation and the time young adults spend online so as to better identify those who are at risk of developing mental illness within our community both on and offline.

References

1. Bargh JA, McKenna KYA. The Internet and social life. Annu Rev Psychol. 2004;55:573-90.
2. Kraut R, Kiesler S, Boneva B, Cummings J, Helgeson V, Crawford A. Internet paradox revisited. The Wired Homestead: An Mit Press Sourcebook on the Internet and the Family. 2003;58:347.
3. Kujath CL. Facebook and MySpace: Complement or Substitute for Face-to-Face Interaction? Cyberpsychology, Behavior, and Social Networking. 2011;14(1-2):75-8.
4. van Ingen E. Social participation revisited: Disentangling and explaining period, life cycle and cohort effects. Acta sociologica. 2008;51(2):103-21.
5. Inside Facebook gold [database on the Internet]. Inside Facebook. 2011 [cited July 2011]. Available from: http://gold.insidenetwork.com/facebook/.
6. Australian Bureau of Statistics. Mental Health in Australia: A Snapshot, 2004-05 Australian Bureau of Statistics2006 30/08/2006. Report No.: 4824.0.55.001.
7. Newman DL, Moffitt TE, Caspi A, Magdol L, Silva PA, Stanton WR. Psychiatric disorder in a birth cohort of young adults: Prevalence, comorbidity, clinical significance, and new case incidence from ages 11ñ21. J Consult Clin Psych. 1996;64(3):552.
8. Australian Bureau of Statistics. National survey of mental health and wellbeing: Summary of results. Canberra: Australian Bureau of Statistics.,2008. Report No.: 4326.0.
9. Stein MB, Fuetsch M, Muller N, Hofler M, Lieb R, Wittchen HU. Social anxiety disorder and the risk of depression: A prospective community study of adolescents and young adults. Archives of General Psychiatry. 2001;58(3):251.
10. Undersatnding depression [database on the Internet]. Helpguide.org. 2011 [cited July 2011]. Available from: http://www.helpguide.org/mental/depression_signs_types_diagnosis_treatment.htm.
11. Cacioppo JT, Hawkley LC. Social isolation and health, with an emphasis on underlying mechanisms. Perspect Biol Med. 2003;46(3):S39-S52.
12. Erikson EH. Identity, youth, and crisis. [1st ed. New York: W. W. Norton; 1968.
13. Kroger J, Martinussen M, Marcia JE. Identity status change during adolescence and young adulthood: A meta-analysis. J Adolescence. 2010 Oct;33(5):683-98.
14. Marcia JE. Ego identity : a handbook for psychosocial research. New York: Springer-Verlag; 1993.
15. Davies W. You don't know me, but. Social capital & social software. 2003.
16. Putnam RD. Bowling alone: The collapse and revival of American community: Simon and Schuster; 2001.
17. Flew T. New media: An introduction. 2005.
18. Kmet LM, Lee RC, Cook LS. Standard quality assessment criteria for evaluating primary research papers from a variety of fields: Alberta Heritage Foundation for Medical Research; 2004.
19. Higgins J, Green S. Cochrane Handbook for Systematic Reviews of Interventions Version 5.0. 1 [updated September 2008]. The Cochrane Collaboration, 2008. Available from www cochrane-handbook org.
20. Matsuba MK. Searching for self and relationships online. Cyberpsychology and Behavior. 2006;9(3):275-84.

21. Mazalin D, Moore S. Internet use, identity development and social anxiety among young adults. Behaviour Change. 2004;21(2):90-102.
22. Moody EJ. Internet use and its relationship to loneliness. Cyberpsychology & Behavior. 2001;4(3):393-401.
23. Valenzuela S, Park N, Kee KF. Is There Social Capital in a Social Network Site?: Facebook Use and College Students' Life Satisfaction, Trust, and Participation. Journal of Computer-Mediated Communication. 2009 Jul;14(4):875-901.
24. Gross EF. Logging on, Bouncing Back: An Experimental Investigation of Online Communication Following Social Exclusion. Dev Psychol. 2009;45(6):1787-93.
25. Hu M. Will online chat help alleviate mood loneliness? Cyberpsychology and Behavior. 2009;12(2):219-23.
26. Steinfield C, Ellison NB, Lampe C. Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. J Appl Dev Psychol. 2008;29(6):434-45.
27. Kang S. Disembodiment in online social interaction: Impact of online chat on social support and psychosocial well-being. Cyberpsychology & Behavior. 2007;10(3):475-7.
28. Valenzuela S, Park N, Kee KF. Is There Social Capital in a Social Network Site?: Facebook Use and College Students' Life Satisfaction, Trust, and Participation1. Journal of Computer Mediated Communication. 2009;14(4):875-901.
29. Diener E, Suh E, Oishi S. Recent findings on subjective well-being. Indian Journal of Clinical Psychology. 1997;24:25-41.
30. Rosenberg M. Society and the adolescent self-image: Wesleyan University Press; 1989.
31. Ellison NB, Steinfield C, Lampe C. The benefits of Facebook friends: Social capital and college students use of online social network sites. Journal of Computer Mediated Communication. 2007;12(4):1143-68.

Guidelines for Authors

Journal: Journal of Cyberpsychology, Behaviour and Social Networking

Guidelines on Length

Original research articles should be a maximum of 3000 words excluding the references and tables. Reviews should be a maximum of 4000 words excluding the references and tables. Rapid Communications should be a maximum of 2000 words. Prepare manuscripts **double spaced** in Microsoft Word. Leave ample margins on both sides, top and bottom. The title page should include the author's names and affiliations, the source of a work or study (if any), and a running title of about 45 characters. Please indicate the **name, address, phone number, fax number, and email address** of the author to whom correspondence should be addressed. The second page should consist of an abstract of not more than 250 words, which should be self-explanatory without reference to the text. One possible format could be: **abstract, introduction, materials and methods, results, discussion, acknowledgments, and references.** Number pages consecutively. At the end of the paper, give the name, address, and email address of the individual to whom reprint requests should be directed. Consult an issue of the Journal for the exact format.

Important: Please upload individual files of all manuscript material—do **NOT** upload a single PDF file containing all text, figure, and table files of your paper. Once all individual files are uploaded on to Manuscript Central, the system will automatically create a single PDF proof for you and the peer-review process. Disclosure Statement Immediately following the *Acknowledgments* section, include a section entitled "Author Disclosure Statement."

This text must be part of your actual manuscript file. In this portion of the paper, authors must disclose any commercial associations that might create a conflict of interest in connection with submitted manuscripts. This statement should include appropriate information for EACH author, thereby representing that competing financial interests of all authors have been appropriately disclosed according to the policy of the Journal. It is important that all conflicts of interest, whether they are actual or potential, be disclosed. This information will remain confidential while the paper is being reviewed and will not influence the editorial decision. Please see the Uniform Requirements for Manuscripts Submitted to Biomedical Journals at http://www.icmje.org/index.html#conflicts for further guidance. If no conflicts exist,

the authors must state "No competing financial interests exist."

TABLES AND ILLUSTRATIONS

Prepare each table along with its title on a **separate page.** Use arabic numerals to number tables. Remember each table must stand alone-i.e., contain all necessary information in the caption, and the table itself must be understood independently of the text. Details of experimental conditions should be included in the table footnotes. Information that appears in the text should not be repeated in tables, and tables should not contain data that can be given in the text in one or two sentences. Figures/images should be presented according to these guidelines:

- Do not include any illustrations as part of your text file.
- Do not prepare any figures in Word as they are not workable.
- Line illustrations must be submitted at 1200 DPI.
- Halftones and color photos should be submitted at 300 DPI.
- Please submit only **TIFF or EPS files**.
- **Color art must be saved as CYMK not RGB or INDEX**. If RGB files are submitted, the files will be converted to CYMK, and some slight color variation may occur.
- **Do NOT submit PowerPoint or Excel files**. Adobe is the software of choice.

Please name your artwork files with the submitting authors name i.e. SmithFig1.tif, SmithTable2.tif etc. Label figures and tables inside the files in addition to naming the file with the figure or table numbers. **Authors who do not follow these guidelines may have their submission returned to them without being reviewed.**

You will be given directions on how to correct any files which do not pass.

ADDITIONAL INFORMATION ABOUT ART FILES

Converting Word or Excel files: Perhaps the best and easiest way to convert Word or Excel files into a format which is suitable for print is to scan them using the below guidelines:

- All files should be scanned at 100% size.
- 300 dpi
- Final color mode: cmyk
- save file as: .tif or .eps

If you need directions on how to convert a Power Point slide to acceptable format go to http://www.liebertpub.com/MEDIA/pdf/ppconvert.pdf

The journal will publish color photographs, but the author will be charged for the cost

of color separations and printing at the rate of $275 per piece of color art plus $1,200 per page of color. The Publisher will provide the author with a more precise cost estimate when the figures are received. For further details, contact the Publisher. A list of figure legends should be supplied at the end of the manuscript, double spaced. Magnifications should be included where appropriate. Illustrations will not be returned unless requested. ZIP disks containing figures may be accepted only if it is Photoshop or Illustrator TIF or EPS format. All other disks will be rejected. A complete, separately collated set must be submitted with each copy of the manuscript. Illustrations can be printed in color with a subsidy from the author and are encouraged. Contact the publisher for details.

REFERENCES

References **MUST** be presented in the following style:

Journal papers: Murray BE, Singh KV, Markowitz SM. Evidence for clonal spread of a single strain of Enterococcus. Journal of Infectious Diseases 1991; 163:780-5.

Books: Lezak MD. (1995) *Neuropsychological assessment.* New York: Oxford University Press.

Book Chapters: Ruoff KL.(1995) Streptococcus. In: Murray PR, Baron EJ, eds. *Manual of clinical microbiology.* Washington, D.C.: ASM Press, pp. 299-307.

Please list all the authors when there are six or fewer. When there are seven or more authors, list only the first three, followed by "et al." References in text must be cited in numerical order using superscript numbers. Do not use author/date format. If it is necessary to cite an abstract, this should be designated. Authors are responsible for the accuracy of the references, and are reminded that inaccurate references are highly frustrating to the reader, the cited author, and indexing services.

Participation and Quality of Life of Young Adults Living in Western Australia

Research Report

Robyn Earl

Edith Cowan University

In Conjunction with
Telethon Institute of Child Health Research

Abstract

BACKGROUND: Young adulthood is a time when individuals establish patterns of behaviour that have long-term effects on health and wellbeing. There is currently a paucity of normative data examining the role of the environment in shaping these patterns, in regards to participation, and the effect on quality of life. The International Classification of Functioning, Disability and Health was used to explore this relationship and to describe these elements as they relate to one another for a sample of typically developing young adults living in Western Australia.

METHODOLOGY: Paper based cross sectional surveys were used to collect data from participants from across Western Australia. **RESULTS:** 60 participants aged 18-30 years completed the surveys (n=60). Chi squared and Oneway ANOVA analysis was used to explore the relationships between individual contextual factors and quality of life (KidScreen), participation (Life-H) and quality of the environment (Measure of the Quality of Envrionment). Accommodation type was found to have a significant impact on young adult quality, with those still in the parental home reporting better Quality of life than those who were not ($p=0.039$). Income also played an important role in determining young adult satisfaction with daily participation, particularly in relation to fitness ($p=0.031$). **DISCUSSION:** This study found that the environment plays an important role in the lives of young adults. This is consistent with previous studies conducted outside of Western Australia.

Author: Robyn Earl
Supervisors: Dr. Sonya Girdler
Ms. Kitty Foley
Dr. Helen Leonard
Submitted: October 2011

Introduction

Young Adulthood

Throughout the transition from adolescence to young adulthood, individuals establish patterns of behaviour that have long-term effects on health and wellbeing (Arnett, 2000; Erikson, 1968; Kroger, Martinussen, & Marcia, 2010; Marcia, 1993). It is during this time that young adults begin the process of developing an occupationally based identity (Erikson, 1968). Erikson suggested that if an individual is unable to begin this process satisfactorily there is the potential for development of significant future mental health issues including behavioural concerns, personality and identity disorders (Erikson, 1968). Further more, it is important for young adults to form secure and intimate relationships with others, as this is a secondary method by which identity is further developed and refined (Erikson, 1968). However, since Erikson first presented his theory in the 1960s, there have been a number of significant shifts in social trends within Australia. These changes have resulted in the postponement of many young people achieving the traditional markers of adulthood.

The most significant shits have been in relation to the education and employment rates of young adults (Australian Bureau of Statistics, 2005). In 2001, the Australian Bureau Statistics (ABS) reported that 23% of young adults were participating in higher education compared to 12% in 1976 (Australian Bureau of Statistics, 2005). This shift in educational trends is partly due to the significant increase of the participation of women in higher education (Australian Bureau of Statistics, 2005). In 2001, 43% of 20-29 year old women had a bachelor's degree compared to just 12% in 1976 (Australian Bureau of Statistics, 2005). Further more, recent decades have seen a significant increase in the rate of 20-29 year olds participating in the work force, with a 6% increase between 1976 and 2001 (75% to 81%) (Australian Bureau of Statistics, 2005). However, census reports have revealed divergent gender trends in relation to young adults engagement in the workforce (Australian Bureau of Statistics, 2005). In 1976, 57% of women (20-29 years) were working, compared to 75% in 2001. Conversely, rates of employment for males in their 20s dropped 5% between 1976 and 2001, with the greatest drop of participation being by males in their early to mid 20s (Australian Bureau of Statistics, 2005). This has paralled the trend for young

males in this age group to participate in higher education after school rather than going straight in to the workforce. (Australian Bureau of Statistics, 2005). It is important that research examines the impact of these shifts and how they have impacted on young adults participation and attainment of important life milestones. The International Classification of Functioning, Disability and Health (ICF) provides a biopsychosocial framework by which researchers and clinicians may examine these changes and how they impact on outcomes such as quality of life.

International Classification of Functioning, Disability and Health

The ICF is the culmination of the shift in the approach to disability and functioning, driven by the civil rights movement of the 1960's (Madden & Australian Institute of Health and Welfare., 2003; Noonan, Kopek, Noreau, Singer, & Dvorak, 2009; Peterson, 2011). Its purpose is "to provide a unified and standard language and framework for the description of health and health related states" (World Health Organization., 2001, p. 3). 'Disability' and 'functioning' are defined as complex constructs of the interaction between body functions and structures, activities and participation, and environmental factors within the context of a health condition (see Appendix 1) (Madden & Australian Institute of Health and Welfare., 2003; Peterson, 2011; World Health Organization., 2001). The ICF has achieved a position of prominence in the field of rehabilitation as it is an effective model by which to analyse, illustrate and understand functioning and disability as they relate to health status (Huber, Sillick, & Skarakis-Doyle, 2010). The ICF was used in this research as the guiding framework.

Participation

According to the ICF, functioning and disability are the result of the complex interaction between the individual and their context (Madden & Australian Institute of Health and Welfare., 2003; Peterson, 2011; World Health Organization., 2001). An individual's ability to function is measured by their ability to participate in "life situations". Participation is defined as "a person's involvement in life situations. [Representing] the societal perspective of functioning" (World Health Organization., 2001, p. 12). Colver (2009) argued that participation is the objective measure of functioning and along with quality of life, should be a key outcome for persons with

disability. This highlights that participation and its determinants is an outcome that should be further investigated in normative samples.

Education

In an increasingly industrialised world the period for identity formation and development is being extended well into what is chronologically considered young adulthood (Arnett, 1997, 2000; Erikson, 1968). During this time, occupation forms the basis for identity development with participation in higher education providing the foundations for exploration into future occupations (Arnett, 1997, 2000; Erikson, 1968). Arnett (1997) in a study aimed at exploring what is was that young people felt marked the point of adulthood found that after financial independence from parents, completion of higher education was considered to be a significant marker of adulthood. Financial independence was also directly impacted by participation in higher education, with moving out of home coinciding with completion of study and the securing of more highly paid employment (Baum & Payea, 2004; Ross & Van Willigen, 1997). With young adults staying in education and subsequently in the parental home longer it is important that future research explore the impacts this has on the overall participation and quality life of young adults.

Work and Employment

Work and employment play a crucial role in the identity development of young adults (Erikson, 1968; Sadock & Sadock, 2007). Occupation is the method by which many young people seek to define themselves and their status as an adult (Arnett, 1997). Arnett (1997), found that many young adults are moving away from the traditional markers that define the transition into adulthood, such as marriage and having children and redefining what it is that they believe makes one an adult. It was found that most young adults believe that to be an adult one must be financially independent from their parents and to have moved from the family home (Arnett, 1997). This allows us to infer that young adults value employment for its ability to provide financial stability. It also indicates an association between economic status and quality of life.

American research has reported a strong relationship between wellbeing and socio-economic status (Georgellis, Gregoriou, Healy, & Tsitsianis, 2008; Saarni, Saarni, & Saarni, 2008). Remunerative employment is linked to increased life satisfaction and

quality of life at both the individual and community level (Georgellis et al., 2008; Saarni et al., 2008). The importance of socioeconomic factors are also evident in the consistent finding that people in higher paid positions report higher quality of life (Baum & Payea, 2004; Georgellis et al., 2008; Ross & Van Willigen, 1997; Saarni et al., 2008). The present generation of young Australian adults are tending to stay in education longer than their predecessors and are therefore restricted in their ability to participate in employment and become financially independent from their parents (Australian Bureau of Statistics, 2005). To date there is no Western Australian research has investigated the association between quality of life and the delay in attaining these important life milestones.

Community, Social and Civic Life

Traditional avenues of participation in community, social and civic life are being replaced as young adults move into an increasingly virtual world. Concern has been raised in relation to changes in patterns of physical activity, with young adults leading more sedentary lives (Dunstan et al., 2010; Noreau & Boschen, 2010; van Ingen, 2008). These trends are reflected in the increasing rates of obesity across the Australian population (Obesity Working Group, 2009). The estimated number of persons who are either overweight or obese has increased from 4.6 million in 1989-90 to 7.4 million in 2004-05. This trend is of concern given that obesity has been identified as a significant risk factor for an array of life limiting illness, including type 2 diabetes, cardiovascular disease, osteoarthritis and cancer (Fontaine & Barofsky, 2001; Obesity Working Group, 2009). In the Australian context the overall cost of obesity and obesity related illnesses was estimated to be $58.2 billion in 2008 alone (Obesity Working Group, 2009). Overweight and obese individuals also report decreased health related quality of life, often caused by their difficulty or inability to participate in day-to-day activities (Doll, Petersen, & Stewart-Brown, 2000; Finkelstein, 2000; Fontaine & Barofsky, 2001; Marchesini et al., 2000). It is therefore crucial that future research examines young adults participation and quality of life, particularly in relation to fitness activities.

Environmental Factors

The environment has a significant impact on the level of functioning and quality of life of an individual (Peterson, 2011). Environmental factors are those external to the individual and aspects include the physical environment, as well as, social and

cultural values, beliefs and attitudes (Peterson, 2011; World Health Organization., 2001). According to the ICF, decreased participation results from the negative interaction between the individual and their environment, whereas functioning is the result of a positive interaction (Colver, 2009; Noreau & Boschen, 2010; Peterson, 2011; World Health Organization., 2001). Considerable research has examined the effect of the environment on participation, however, these studies have tended to focus on clinical populations the findings from which may have limited relevance to normative populations (Anaby, Miller, Eng, Jarus, & Noreau, 2009; Colver, 2009; Giles-Corti & Donovan, 2002; Giles-Corti, Macintyre, Clarkson, Pikora, & Donovan, 2003; Noreau & Boschen, 2010; Wilson, Kirtland, Ainsworth, & Addy, 2004). Understanding environmental barriers and facilitators is difficult as they are intrinsically impacted upon by the capabilities of the individual (Noreau & Boschen, 2010). Research with normative samples would enable identification of global barriers to participation and those unique to clinical populations (Burchardt, 2004; Colver, 2009; Noreau & Boschen, 2010). Further normative studies would allow for description of those elements of the environment that facilitate functioning and how these are perceived to influence participation.

Quality of Life

Quality of life is an individual's satisfaction with their level of functioning within their environment (Colver, 2009; Huber et al., 2010; Peterson, 2011), and it is a key outcome for people with disability (Huber et al., 2010; Peterson, 2011). Quality of life is a fundamentally personal construct, which has a reciprocal relationship with participation (Huber et al., 2010; Peterson, 2011). Huber and colleagues proposed that it is possible to place quality of life within the ICF framework under personal factors (Appendix 2) (Huber et al., 2010). Personal factors are currently under defined in the ICF framework and have been indentified by the World Health Organisation as a key area requiring expansion (Huber et al., 2010). The strong the link between quality of life, participation and the environment is extensively documented in relation to clinical populations further supporting the addition of quality of life to the ICF (Colver, 2009; Fontaine & Barofsky, 2001; Marchesini et al., 2000; Saarni, Saarni, & Saarni, 2008). However, the exploration of the link between these elements of the ICF in nonclinical populations is scarce. This study aimed to investigate the relationship between participation, quality of life and the environment

in the context of a normative sample of young adults. The research also aimed to identify the barriers that create barriers to participation and influence quality of life in this population.

Methodology

A cross-sectional survey was used to describe participation and quality of life of young Western Australian adults. Ethics was obtained from the Edith Cowan University Human Research Ethics Committee.

Participants

Participants were limited to young adults aged 18 to 30 years of age living in Western Australia. Participants were recruited to complete a paper-based survey, from Universities, Tafes, sporting clubs, and the general community across Western Australia. Participants were also asked to help in the recruitment process by taking surveys to give to family and friends. Online recruitment utilised the social networking media Facebook to reach a culturally and geographically diverse population. Participants who responded were then sent surveys in the mail.

Measures

Data was collected using a 173 item survey. Items were categorised into seven sections; personal information, medical care, services and illnesses, education and employment, resources and income, young adult participation, environmental influences, and, young adult quality of life. The Assessment of Life Habits (LIFE-H) was used to collect information in relation to young adult's daily participation and satisfaction (Noreau, Fougeyrollas, & Vincent, 2002). The LIFE-H (short form) is a 69 item tool that has been found to have adequate to excellent convergent validity and inter-rater reliability ($r=0.57$-0.91 and $r=0.64$-0.91 respectively), excellent test-retest reliability and intraclass correlation coefficients (ICCs) that ranged from 0.80 to 0.95 (Figueiredo, Korner-Bitensky, Rochette, & Desrosiers, 2010). Questions were amended and two were removed, in order to make the survey culturally relevant to this population.

Environmental influences were reported using the Measure of the Quality of the Environment (MQE). The MQE measures the perceived effect of environmental

barriers and facilitators on social participation (Fougeyrollas, Noreau, St-Michel, & Boschen, 2008). The factors listed are grouped into six domains covering the taxonomy of the International Classification of Disability and Functioning (ICF) (Fougeyrollas et al., 2008).

Young adult quality of life was measured using the KidScreen-27. The Kidscreen-27 is one of the few health related quality of life questionnaires that recognises the increased importance of the socioeconomic context in determining quality of life (Ravens-Sieberer et al., 2007). It is made up of five Rasch scaled dimensions: physical wellbeing (5 items); psychological wellbeing (7 items); autonomy and parents (7 items); peers and social support (4 items); and, school environment (4 items) (Ravens-Sieberer et al., 2007). Ravens-Sieberer and colleagues (2007) examined the psychometric properties of the KIDSCREEN-27 and found that it had satisfactory construct validity in a study of n=22,827 young people (Ravens-Sieberer et al., 2007; Ravens-Sieberer et al., 2010).

Results

Participants

A total of 250 surveys were distributed, by paper copy (n=230) or email (n=20), to potential participants. Sixty surveys were returned (response fraction of 24%). The average age of participants was 22.7 years (SD=2.98) with 39 females (65%) and 21 males (35%). For analysis purposes participants were categorised into one of two groups according to age, 18-22 years (n=28) and 23-30 years (n=32). The sample was further examined according to income, accommodation type and whether or not they were still studying.

Education

Of the 59 participants who reported on their education, 33 (55.9%) were still studying at some level. Of these, 20 (74.1%) were aged 18-22 years with 27 females and 16 males reporting they were still studying. A greater number of 18-22 year olds were studying compared to their older peers, $\chi^2(1)=6.65$, $p=0.01$. Of the participants aged

18-22 year olds three quarters were studying (n=20, 74.8%). Of those participants who were still studying 87.88% were also working (n=29).

Employment & Income

The majority of young adults in education were working casually (n= 18, 54.5%), compared to working in part-time (n= 10, 30.0%) or full-time work (n= 1, 3.0%). A larger proportion of those age 23-30 were in full time employment compared to their younger peers, $\chi^2(5)=8.20$, $p=0.15$. The majority (n= 16, 76.2%) of young males were earning over $18,199, while the majority (n= 23, 62.2%) of females were earning less than $18, 199, $\chi^2(1)=7.89$, $p=0.005$. A greater number (n= 22, 71.0%) of 23-30 year olds were earning over $18,199 compared to 18-22 year olds, $\chi^2(1)=9.88$, $p=0.002$.

Accommodation

The majority (n= 39, 65.0%) of young adults were living in their parental home, as opposed to renting (n=15, 25.0%) or owning their own home (n=6, 10%), (n=39, 65%). All, bar one participant aged 18-22 years was living in their parental home (n=27, 96.4%).

Participation

Accomplishment

The relationship between accomplishment and assistance of the 12 participation domains was explored in relation to contextual factors with no difference between males and females, $F(1,58)=0.61$, $p=0.44$, nor between age groups, $F(1,58)=0.23$, $p=0.63$. Participants reported that they had little to no difficulty completing tasks individually (M= 96.38, SD=9.32).

Income was found to have a significant relationship with young adult accomplishment of employment tasks ($F(1,53)=5.93$, $p=0.02$), with those earning higher incomes reporting increased accomplishment (M= 98.47, SD=6.43). The relationship between mobility and income approached significance ($F(1,56)=3.22$, $p=0.08$), with those earning over $18,199 (M = 100, SD=0) reporting greater accomplishment of mobility tasks such as moving around outside the home and driving a vehicle, please refer to table 1 (Appendix 1).

Satisfaction

Overall, young adults were satisfied to very satisfied with their ability to participate in daily activities (M= 93.34, SD=10.10). Income was not a significant factor in predicting young adult overall satisfaction with daily tasks, F(1,53)=2.09, *p*=0.1. However, those with greater income reported higher satisfaction with their ability to participate in communication (F(1,52)=3.69, *p*=0.06) and household (F(1,53)=3.46, *p*=0.07) tasks, please refer to table 2 (Appendix 2). Higher income earners also reported significantly higher satisfaction with their participation in fitness and relaxation activities (F(1,53)=4.90, *p*=0.03). Those with lower income reported higher satisfaction with education compared to their higher earning peers, (M = 96.00, SD, 9.35).

Environmental Influences

On average, participants rated the environment as a minor facilitator to daily activity (M = 67.60, SD=10.60). Females generally reported more environmental facilitators than males, though this difference was not significant (F(1,57)=2.77, *p*=0.1). More females than males rated support services as a facilitator to participation, (F(1, 54)=4.37, *p*=0.04). Females also rated social networks (F(1,56)=3.32, *p*=0.07) and commercial services (F(1,57)=3.62, *p*=0.06) as greater facilitators to participation when compared to males.

Quality of Life

A higher score on the KIDSCREEN-27 indicated that the participant reported a better quality of life. Overall young adults reported a high quality of life with a mean score of 95.67 (SD=14.52). Males reported a higher quality of life than females though this difference was not significant (F(1, 58)=1.05, *p*=0.31). There was no difference between age group and quality of life (F(1,58)=1.20, *p*=0.28), however, 18-22 year olds (M= 97.88, SD= 15.11) reported a higher average quality of life than their older peers (M= 93.75, SD=13.95). Also, those still living at home reported a greater overall quality of life than those living in a rental or owning their own home (F(2,58)=3.60, *p=0.03),* please refer to table 2 (Appendix 2).

Conclusion

Discussion

This research found that quality of life was significantly linked to both participation and the environment. This finding is consistent with Huber and colleagues conclusion that quality of life should be a key outcome for all persons, whether they have a disability or not (Colver, 2009). Although this was a univariate relationship within a small sample size, it goes some way to further supporting Huber and colleagues (2010) in calling for the inclusion of quality of life in the International Classification of Functioning, Disability and Health (ICF). Further more these results highlight the importance of environmental factors in determining quality of life.

Interestingly this study found that 65% of young adults who participated in this study were still living in their parental home. This is congruent with national findings from the 2006 census data which indicated that the majority of young adults are staying at home longer than ever before (Australian Bureau of Statistics, 2005). This is important to note as many individuals identify leaving home as key marker of adulthood (Arnett, 1997, 2000). In the past young adulthood was the time when individuals separated their identity from their parents and a relationship of equals was established, with the movement away from the family home facilitating this shift (Erikson, 1968; Kroger et al., 2010). Failure to do this was associated with poor mental health and quality of life outcomes (Erikson, 1968; Kroger et al., 2010). However, in this study it was found that participants who were still living in the parental home in fact had higher quality of life scores. This is potentially because remaining at home, particularly while still studying, reduces the financial burden on the individual allowing them greater freedom to participate in daily activities of their choice.

Further more, personal income was found to have a significant or near significant impact on the satisfaction of young adults with their participation in daily activities. A number of international studies have found that increased socioeconomic status is associated with increased life satisfaction and quality of life (Baum & Payea, 2004; Georgellis, Gregoriou, Healy, & Tsitsianis, 2008; Ross & Van Willigen, 1997; Saarni et al., 2008). This suggests that having a greater income affords one the freedom of

opportunity to participate satisfactorily in meaningful occupations. For example a significant relationship was found between fitness participation and income.

Higher income earners were found to be more accomplished at, and have greater satisfaction with fitness activities. This is congruent with a vast number of studies that have consistently found that those of lower socioeconomic status do not participate in sufficient physical activity to be beneficial to their health (Bauman et al., 1996; Giles-Corti & Donovan, 2002; Giles-Corti et al., 2003; Wilson et al., 2004). Giles-Corti and colleagues (2002) found that those of lower socioeconomic status living in Perth, Western Australia, were less likely to participate in vigorous physical activity because they perceived their neighbourhood less attractive and socially supportive to cost free exercise options such as walking (Bauman, Smith, Stoker, Bellew, & Booth, 1999; Giles-Corti & Donovan, 2002; Giles-Corti et al., 2003). Further more, we found that those living with their parents were more likely to report greater satisfaction with fitness activities than those renting. This potentially because those living with their parents are living in higher socioeconomic areas compared to those renting. This may be because their parents are able to afford to live in these higher socioeconomic areas, where as many young adults are unable to afford to either buy or rent in these areas, such as along the coast. Coastal living has been shown to have a positive effect on physical activity, as there is greater access to scenic and safe walking environments (Bauman et al., 1999; Giles-Corti & Donovan, 2002; Giles-Corti et al., 2003). These findings, along with our own, suggest that health promotion should not only target the individual but also look towards making environmental changes that make low cost outdoor exercise options, such running and walking, appealing and safe for not only young adults by the community as a whole.

In interpreting the findings of this study, it is important to acknowledge that there were a number of limitations to this research. Firstly, the response fraction was 25% and limited with only 60 participants, and is only representative of a metropolitan sample. As rural populations have a different set of environmental influences and participation opportunities, we are not able to generalise this study to the young adult population of Western Australia as a whole.

Further more the length and complexity of the survey was another significant limitation of this study. On average it took participants approximately 30 minutes to complete and a number of participants reported that the wording of a number questions was confusing and difficult to understand. This did not lend itself to "on the spot" survey completion but rather required participants to take the survey with them to return or post back at a later date. The anonymous nature survey also meant that a vast majority of participants could not be followed up to remind them to complete and return their survey.

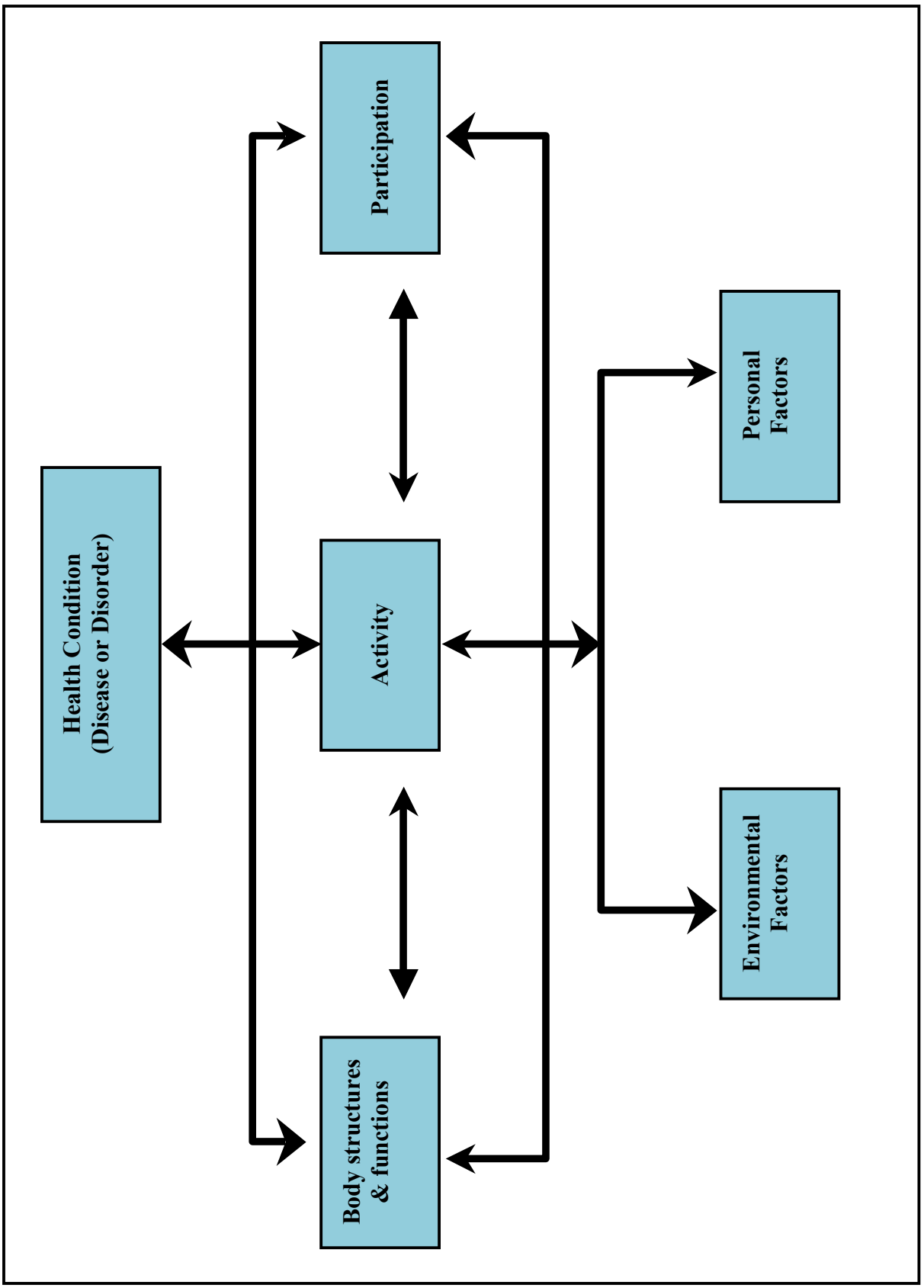
The mode of distribution and recruitment was also a limitation, ideally online survey completion would have allowed alerts and systems to be put in place that would have allowed for reminder messages to sent notifying participants that they have not yet completed or returned their surveys. Unfortunately copyright laws and licensing prevented this from taking place.

The information provided in this study provides a comparison point against which findings from clinical populations can be compared. This will enable both clinicians and researchers the opportunity to gain greater insight into where deficits in participation occur for these populations. Clinically this knowledge will support occupational therapist in identifying opportunities to facilitate greater participation of people living with disabilities. The focus of future study should be to examine the effectiveness of intervention targeted at improving ones satisfaction with how one participates in meaningful activities, making sure that everyone able to participate satisfactorily whether they have a disability or not. This will require continued focus on the means by which young adults are provided opportunities to participate in occupations and ensure that all individuals have the tools that they require to participate satisfactorily. Finally, both health professionals and policy makers should strive to promote the development of safe and appealing environments in lower socioeconomic areas so individuals feel that they can safely and affordably engage in fitness activities. This will hopefully not only improve the health of individuals but also the community as a whole.

List of Appendices

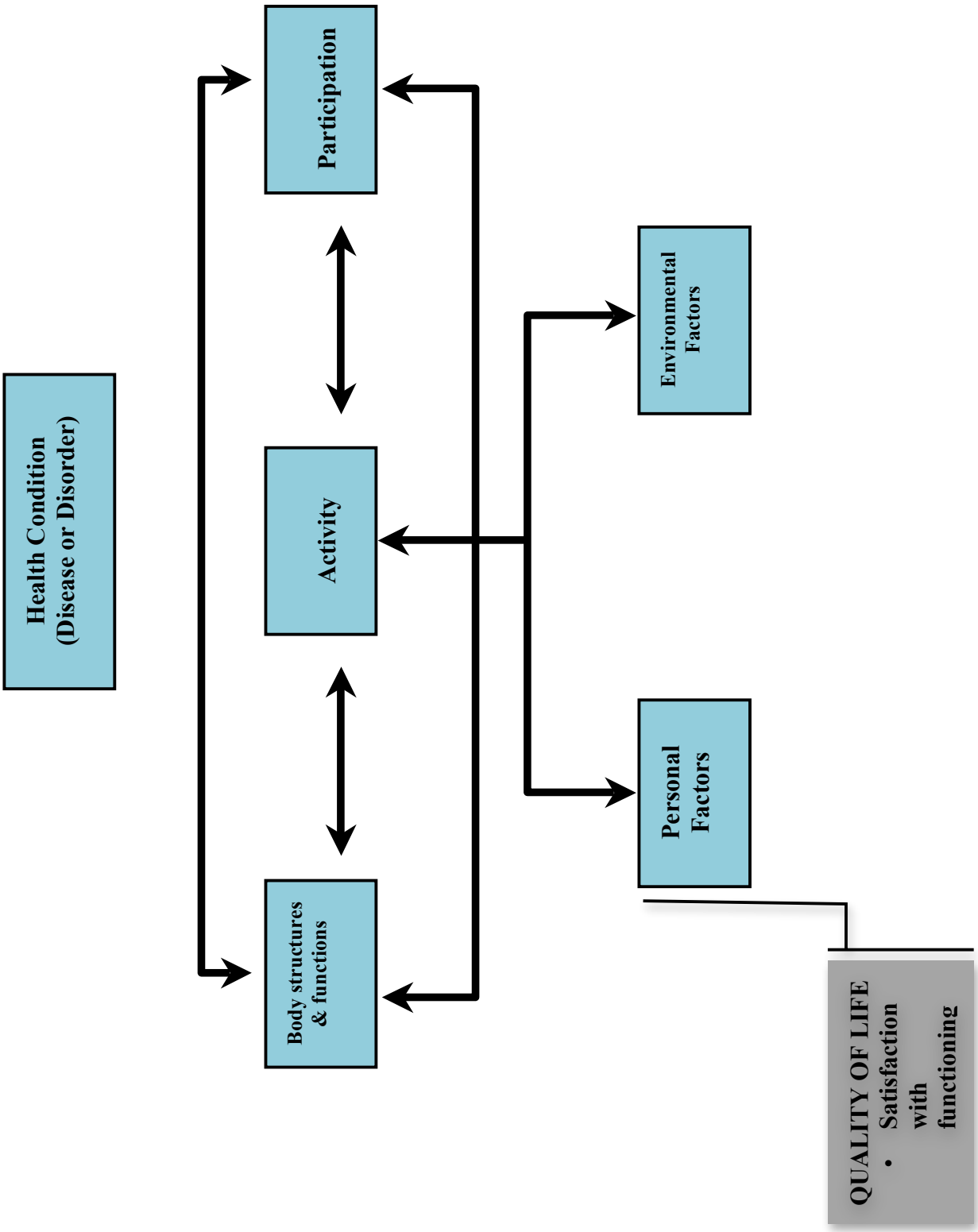
Appendix 1

Figure 1: *The interaction between components of the ICF. (World Health Organization., 2001, p. 26)*



Appendix 2

Figure 2: *Incorporation of Quality of Life into the ICF framework*



Appendix 3

Table 1: *Domains of Participation and Environment by Income and Gender*

	Income					Gender				
	<$18,199		>$18,199			Female		Male		
	Mean	Std Dev	Mean	Std Dev	*p value*	Mean	Std Dev	Mean	Std Dev	*p value*
Domains of Participation										
Nutrition	96.71	(17.11)	97.16	(6.99)	0.895	96.30	(15.09)	98.41	(5.31)	0.538
Fitness	93.55	(17.48)	97.50	(6.46)	0.254	94.83	(14.98)	96.96	(7.34)	0.545
Personal Care	95.47	(17.16)	98.33	(4.32)	0.380	96.45	(14.60)	98.21	(4.48)	0.593
Communication	99.36	(1.58)	98.47	(3.23)	0.208	99.14	(2.23)	98.54	(3.12)	0.405
Housing	97.81	(5.95)	96.75	(7.08)	0.548	96.80	(6.12)	97.62	(6.76)	0.654
Mobility	97.38	(8.00)	100.00	(0.00)	0.078*	98.56	(6.33)	99.15	(3.88)	0.705
Responsibilities	96.03	(16.80)	99.38	(2.19)	0.283	97.15	(14.28)	98.94	(2.66)	0.573
Interpersonal	91.57	(19.15)	96.54	(8.36)	0.200	92.73	(17.39)	97.34	(5.30)	0.242
Community Life	95.04	(17.37)	96.53	(9.47)	0.683	94.82	(16.19)	98.06	(5.97)	0.380
Education	96.58	(17.43)	96.44	(21.62)	0.706	97.13	(15.96)	93.57	(23.22)	0.523
Employment	86.98	(24.91)	98.47	(6.43)	0.018**	91.68	(21.00)	97.92	(8.86)	0.171
Recreation	93.59	(18.59)	96.10	(12.65)	0.551	94.54	(16.50)	95.24	(13.80)	0.870
Domains of Environment										
Social Networks	72.65	(67.58)	67.58	(12.88)	0.200	72.47	(15.08)	65.14	(12.85)	0.074*
Attitudes of Others	70.19	(12.68)	64.23	(12.31)	0.078*	68.76	(13.23)	64.64	(11.80)	0.226
Employment Services	66.31	(12.74)	61.98	(9.13)	0.155	64.28	(12.71)	64.42	(8.36)	0.964
Financial Resources	68.45	(20.53)	64.69	(13.68)	0.418	68.56	(18.41)	63.10	(14.50)	0.253
Commercial Services	76.62	(12.48)	67.00	(15.67)	0.02**	73.99	(15.76)	66.43	(11.38)	0.062*
Support Services	67.76	(12.93)	62.18	(12.41)	0.113	67.72	(14.18)	60.19	(8.16)	0.041**
Educational Services	77.08	(16.96)	73.47	(13.14)	0.609	77.01	(16.44)	72.11	(14.66)	0.480
Infrastructure	74.12	(12.27)	67.59	(11.29)	0.043**	72.53	(13.13)	67.49	(9.53)	0.142
Community Organisations	70.06	(11.48)	64.16	(11.86)	0.064*	68.80	(13.32)	64.05	(8.68)	0.156

*Note: * P value <0.08 **P value <0.05*

Appendix 4

Table 2: *Young Adult Quality of Life and Satisfaction by Income and Accommodation Type*

	Income					**Accommodation Type**						
	<$18,199		**>$18,199**			**Own Home**		**Parental Home**		**Rental**		
	Mean	Std. Dev.	Mean	Std. Dev.	*p value*	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	*p value*
Quality of Life												
Kidscreen-27	93.46	(16.94)	97.23	(12.28)	0.334	95.17	(8.52)	98.87	(13.75)	87.53	(15.83)	0.034**
Satisfaction with Domains of Participation												
Nutrition	90.63	(14.60)	94.61	(11.17)	0.258	98.96	(2.55)	94.10	(11.57)	86.25	(16.40)	0.061*
Fitness	84.86	(17.06)	93.75	(12.61)	0.031**	100.00	(0.00)	91.49	(12.33)	80.42	(20.30)	0.010**
Personal Care	93.15	(13.20)	97.84	(6.26)	0.092	100.00	(0.00)	97.66	(5.99)	89.58	(16.31)	0.017**
Communication	91.00	(13.84)	96.88	(8.31)	0.060*	100.00	(0.00)	95.00	(9.53)	90.63	(15.93)	0.201
Housing	90.54	(16.10)	96.70	(7.25)	0.069*	100.00	(0.00)	95.60	(10.49)	87.78	(16.47)	0.051*
Mobility	92.69	(13.87)	97.07	(7.62)	0.147	100.00	(0.00)	96.67	(7.75)	89.67	(16.85)	0.058*
Responsibilities	89.74	(13.81)	96.39	(10.29)	0.093	100.00	(0.00)	94.04	(10.99)	87.22	(15.06)	0.057*
Interpersonal	89.90	(11.74)	94.25	(11.65)	0.174	100.00	(0.00)	94.10	(9.88)	85.56	(14.76)	0.012**
Community Life	93.51	(11.95)	93.86	(15.69)	0.923	100.00	(0.00)	95.09	(12.39)	88.75	(17.75)	0.168
Education	96.00	(9.35)	89.00	(24.02)	0.181	100.00	(0.00)	97.06	(8.18)	78.85	(30.36)	0.004**
Employment	88.07	(17.30)	95.43	(10.26)	0.071*	98.44	(3.13)	94.27	(12.27)	85.43	(18.35)	0.096
Recreation	91.00	(15.12)	91.26	(13.42)	0.948	100.00	(0.00)	92.55	(13.97)	85.48	(14.69)	0.071*

*Note: * p value <0.08 **p value <0.05*

References

Anaby, D., Miller, W. C., Eng, J. J., Jarus, T., & Noreau, L. (2009). Can personal and environmental factors explain participation of older adults? *Disability and rehabilitation, 31*(15), 1275-1282. doi: 10.1080/09638280802572940

Arnett, J. J. (1997). Young people's conceptions of the transition to adulthood. *Youth & Society, 29*(1), 3-23.

Arnett, J. J. (2000). Emerging adulthood - A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480.

Australian Bureau of Statistics. (2005). People in their 20s: Then and now. In S. Linacre (Ed.), *Australian social trends, 2005*. Canberra: Australian Bureau of Statistics,.

Baum, S., & Payea, K. (2004). Education pays 2004: The benefits of higher education for individuals and society. *Washington, DC: The College Board*.

Bauman, A., Bellew, B., Booth, M., Hahn, A., Stoker, L., & Thomas, M. (1996). Towards best practice for the promotion of physical activity in the areas of NSW. *NSW Health Department, State Health Publication HP960205*.

Bauman, A., Smith, B., Stoker, L., Bellew, B., & Booth, M. (1999). Geographical influences upon physical activity participation: Evidence of a "coastal effect". *Australian and New Zealand Journal of Public Health, 23*(3), 322-324.

Colver, A. (2009). Quality of life and participation. *Developmental medicine and child neurology, 51*(8), 656-659.

Doll, H. A., Petersen, S. E. K., & Stewart-Brown, S. L. (2000). Obesity and Physical and Emotional Well-Being: Associations between Body Mass Index, Chronic Illness, and the Physical and Mental Components of the SF-36 Questionnaire&ast. *Obesity, 8*(2), 160-170.

Dunstan, D., Barr, E., Healy, G., Salmon, J., Shaw, J., Balkau, B., . . . Owen, N. (2010). Television viewing time and mortality: the Australian Diabetes, Obesity and Lifestyle study (AusDiab). *Circulation, 121*(3), 384.

Erikson, E. H. (1968). *Identity, youth, and crisis* ([1st ed.). New York: W. W. Norton.

Figueiredo, S., Korner-Bitensky, N., Rochette, A., & Desrosiers, J. (2010). Use of the LIFE-H in stroke rehabilitation: A structured review of its psychometric properties. *Disability and rehabilitation, 32*(9), 705-712. doi: 10.3109/09638280903295458

Finkelstein, M. M. (2000). Body mass index and quality of life in a survey of primary care patients. *Journal of Family Practice, 49*(8), 734-740.

Fontaine, K., & Barofsky, I. (2001). Obesity and health related quality of life. *Obesity Reviews, 2*(3), 173-182.

Fougeyrollas, P., Noreau, L., St-Michel, G., & Boschen, K. (2008). Measure of the Quality of the Environment: Short version. Quebec: RIPPH/ INDCP.

Georgellis, Y., Gregoriou, A., Healy, J., & Tsitsianis, N. (2008). Unemployment and life satisfaction: a non-linear adaptation process. *International Journal of Manpower, 29*(7), 668-680.

Giles-Corti, B., & Donovan, R. J. (2002). Socioeconomic Status Differences in Recreational Physical Activity Levels and Real and Perceived Access to a Supportive Physical Environment* 1. *Preventive medicine, 35*(6), 601-611.

Giles-Corti, B., Macintyre, S., Clarkson, J. P., Pikora, T., & Donovan, R. J. (2003). Environmental and lifestyle factors associated with overweight and obesity in Perth, Australia. *American Journal of Health Promotion, 18*(1), 93-102.

Huber, J. G., Sillick, J., & Skarakis-Doyle, E. (2010). Personal perception and personal factors: incorporating health-related quality of life into the International Classification of Functioning, Disability and Health. *Disability and rehabilitation, 32*(23), 1955-1965. doi: Doi 10.3109/09638281003797414

Kroger, J., Martinussen, M., & Marcia, J. E. (2010). Identity status change during adolescence and young adulthood: A meta-analysis. *Journal of Adolescence, 33*(5), 683-698. doi: Doi 10.1016/J.Adolescence.2009.11.002

Marchesini, G., Solaroli, E., Baraldi, L., Natale, S., Migliorini, S., Visani, F., . . . Melchionda, N. (2000). Health-related quality of life in obesity: the role of eating behaviour. *Diabetes, nutrition & metabolism, 13*(3), 156-164.

Marcia, J. E. (1993). *Ego identity : a handbook for psychosocial research*. New York: Springer-Verlag.

Noreau, L., & Boschen, K. (2010). Intersection of participation and environmental factors: A complex interactive process. *Archives of physical medicine and rehabilitation, 91*(9 (supplement 1)), S44-S53. doi: 10.1016/j.apmr.2009.10.037

Noreau, L., Fougeyrollas, P., & Vincent, C. (2002). The LIFE-H: Assessment of the quality of social participation. *Technology and Disability, 14*, 113-118.

Obesity Working Group. (2009). Obesity in Australia: A need for urgent action *Australia: The healthiest country by 2020*. Barton, ACT Preventative Health Taskforce.

Ravens-Sieberer, U., Auquier, P., Erhart, M., Gosch, A., Rajmil, L., Bruil, J., . . . Kilroe, J. (2007). The KIDSCREEN-27 quality of life measure for children and adolescents: psychometric results from a cross-cultural survey in 13 European countries. *Quality of life resesach, 16*, 1347-1356. doi: DOI 10.1007/s11136-007-9240-2

Ravens-Sieberer, U., Erhart, M., Rajmil, L., Herdman, M., Auquier, P., Bruil, J., . . . Kilroe, J. (2010). Reliability, construct and criterion validity of the KIDSCREEN-10 score: a short measure for children and adolescents' well-being and health-related quality of life. *Quality of life resesach, 19*(1487-1500). doi: DOI 10.1007/s11136-010-9706-5

Ross, C. E., & Van Willigen, M. (1997). Education and the subjective quality of life. *Journal of Health and Social Behavior, 38*(3), 275-297.

Saarni, S. I., Saarni, E. S., & Saarni, H. (2008). Quality of life, work ability, and self employment: a population survey of entrepreneurs, farmers, and salary earners. *Occupational and Environmental Medicine, 65*(2), 98.

van Ingen, E. (2008). Social participation revisited: Disentangling and explaining period, life cycle and cohort effects. *Acta sociologica, 51*(2), 103-121. doi: 10.1177/000169930809003

Wilson, D. K., Kirtland, K. A., Ainsworth, B. E., & Addy, C. L. (2004). Socioeconomic status and perceptions of access and safety for physical activity. *Annals of Behavioral Medicine, 28*(1), 20-28.

World Health Organization. (2001). *ICF : International classification of functioning, disability and health*. Geneva: World Health Organization.

Guidelines for Authors

The *Australian Occupational Therapy Journal* is the official journal of Occupational Therapy Australia. The journal publishes original articles dealing with theory, research, practice and education in occupational therapy. Papers in any of the following forms will be considered: Feature Articles, Research Articles, Reviews, Viewpoints, Critically Appraised Papers, and Letters to the Editor.

ARTICLE TYPES

Research Articles Research Articles should contain the following: *Structured abstract:* 250 word limit.

Introduction: The aims of the article should be clearly stated and a theoretical framework (if applicable) should be presented with reference to established theoretical model(s) and background literature. A succinct review of current literature should set the work in context. The introduction should not contain findings or conclusions. *Methods:* This should provide a description of the method (including subjects, procedures and data analysis) in sufficient detail to allow the work to be repeated by others. *Results:* Results should be presented in a logical sequence in the text, tables and figures. The same data should not be presented repetitively in different forms. *Conclusion:* The conclusion should consider the results in relation to the purpose of the article advanced in the introduction. The relationship of your results to the work of others and relevant methodological points could also be discussed. Implications for future research and practice should be considered. The conclusion section of your structured abstract should contain the key messages/take home points of your article.

Research Article manuscripts should not exceed 4000 words, and have no more than 35 references.

(Please note, however, that articles clearly reporting 'substantive in-depth qualitative data' will be allowed a higher word limit of 5000 words. If you manuscript fits this category, please state this in your cover letter submitted in the Manuscript Information section on ScholarOne.)

For manuscripts that report on randomised controlled trials, please include all the information required by the CONSORT checklist, available from http://www.consort-

statement.org. All manuscripts must include a flow chart showing the progress of participants during the trial. Where applicable, reference should be made to the extension to the CONSORT statement for non-pharmacological treatment and the CLEAR NPT. When restrictions on word length make this difficult, this information may be provided in a separate document submitted with the manuscript.

EDITORIAL REVIEW AND ACCEPTANCE The acceptance criteria for all papers are quality, originality and significance to our readership. Except where otherwise stated, Feature Articles, Research Articles, Reviews and Viewpoint manuscripts are blind peer reviewed by two anonymous reviewers. Final acceptance or rejection rests with the Editorial Board or the editor, who reserves the right to refuse any material for publication.

Manuscripts should be written so that they are intelligible to the professional reader who is not a specialist in the particular field. They should be written in a clear, concise, direct style. Where contributions are judged as acceptable for publication on the basis of scientific content, the Editor and the Publisher reserve the right to modify typescripts to eliminate ambiguity and repetition and improve communication between author and reader. If extensive alterations are required, the manuscript will be returned to the author for revision.

COVER LETTER AND ETHICAL CONSIDERATIONS Papers are accepted for publication in the journal on the understanding that the content has not been published or submitted for publication elsewhere, and this must be stated in the covering letter. The covering letter must contain an acknowledgement that all authors have contributed significantly, and that all authors are in agreement with the content of the manuscript.

Authors must also state that the protocol for the research project has been approved by a suitably constituted Human Research Ethics Committee of the institution within which the work was undertaken and that it conforms to the provisions of the Declaration of Helsinki (as revised in 2008) available at http://www.wma.net/en/30publications/10policies/b3/index.html. All investigations involving humans must include a statement about the ethical review process. It is expected that most investigations will seek review by a Human Ethics Review Committee. Where ethical review has not been sought or obtained, justification must

be provided. It is expected that most investigations involving humans will require informed consent for participant data to be collected and/or used; this process should be described. A statement is also required about preserving participant anonymity. The Australian Occupational Therapy Journal retains the right to reject manuscripts which do not describe these processes, or which describe unethical conduct related to human or animal studies.

COPYRIGHT Papers accepted for publication become copyright of Occupational Therapy Australia and authors will be asked to sign an Exclusive Licence Form. In signing the Exclusive License Form it is assumed that authors have obtained permission to use any copyrighted or previously published material. All authors must read and agree to the conditions outlined in the Exclusive Licence Form, and must sign the Form or agree that the corresponding author can sign on their behalf. Articles cannot be published until a signed Exclusive Licence Form has been received.

STYLE OF THE MANUSCRIPT Manuscripts should follow the style of the Publication Manual of the American Psychological Association, 6th ed. (2009). ***Spelling.*** The Journal uses Australian spelling and authors should therefore follow the latest edition of the Macquarie Dictionary. ***Units.*** All measurements must be given in SI or SI-derived units. ***Abbreviations.*** Abbreviations should be used sparingly - only where they ease the reader's task by reducing repetition of long, technical terms. Initially use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only. **PARTS OF THE MANUSCRIPT** Manuscripts should be presented in the following order: (i) title page, (ii) abstract and key words, (iii) text, (iv)acknowledgements, (v) references, (vi) appendices, (vii) figure legends, (viii) tables (each table complete with title and footnotes) and (ix) figures. Footnotes to the text are not allowed and any such material should be incorporated into the text as parenthetical matter. **Title page** The title page should contain (i) the title of the paper, (ii) the full names and qualifications of the authors and (iii) the addresses of the institutions at which the work was carried out together with (iv) the full postal and email address, plus facsimile and telephone numbers, of the author to whom correspondence about the manuscript should be sent. The present address of any author, if different from that where the work was carried out, should be supplied in a footnote.

The title should be short, informative and contain the major key words and consider including the study design for research articles. Do not use abbreviations in the title. A short running title (less than 40 characters) should also be provided.

All submitted manuscripts must indicate the total word length for the manuscript, word length of the abstract, number of references, figures and tables on the title page of the manuscript. **Abstract and key words** Research, Feature and Review articles must have a structured abstract that states in 250 words or fewer the purpose, basic procedures, main findings and principal conclusions of the study. Divide the abstract with the headings: Background/Aim, Methods, Results, Conclusions and significance of the study. Viewpoint articles should have an unstructured abstract of 150 words or fewer. Abstracts should not contain abbreviations or references.

Key words Three to five key words must be supplied. They are required to index the content of the paper and should be selected from the US National Library of Medicine's Medical Subject Headings (MeSH) browser list http://www.nlm.nih.gov/mesh/meshhome.html. Key words should be arranged in alphabetical order. Please do not use words already written in your title or abstract.

Text Authors should use the following subheadings to divide the sections of their manuscript: Introduction, Methods, Results and Conclusion. All articles should include an introduction that provide a background to the article, describes its purpose and outlines its relevance to occupational therapy. References should be made to an established theoretical background and/or background literature. The implications of the work for occupational therapy practice, and further research and/or conceptual development, should be clearly described. **Acknowledgements** The source of financial grants and other funding must be acknowledged, including a frank declaration of the authors' industrial links and affiliations. Authors should state any potential conflicts of interest. The contribution of colleagues or institutions should also be acknowledged. Personal thanks and thanks to anonymous reviewers are not appropriate. **References** The American Psychological Association (author, date) system of referencing is used (examples are given below). In the text give the author's name followed by the year in parentheses: Smith (2000). If there are two authors use 'and': Smith and Jones (2001); but if cited within parentheses use '&': (Smith & Jones, 2001). When reference is made to a work by three to five authors, cite all the authors

the first time: (Davis, Jones, Wilson, Smith & Lee, 2000); and in subsequent citations, include only the name of the first author followed by et al.: (Davis et al., 2000). When reference is made to a work by six or more authors, the first name followed by et al. should be used in all instances: Law et al. (1997). If several papers by the same author(s) from the same year are cited, a, b, c, etc. should be inserted after the year of publication. Within parentheses, groups of authors should be listed alphabetically). In the reference list, references should be listed in alphabetical order. In the reference list, cite the names of all authors when there are six or fewer; when seven or more, list only the first six followed by et al. Do not use ibid. or op cit. Reference to unpublished data and personal communications should not appear in the list but should be cited in the text only (e.g. Smith A, 2000, unpublished data). All citations mentioned in the text, tables or figures must be listed in the reference list. Names of journals should be abbreviated according to the Serial Sources for the Biosis Data Base, available in most libraries or from http://www.biosis.org. Authors are responsible for the accuracy of the references.

We recommend the use of a tool such as EndNote or Reference Manager for reference management and formatting. EndNote reference styles can be searched for here: http://www.endnote.com/support/enstyles.asp Reference Manager reference styles can be searched for here: http://www.refman.com/support/rmstyles.asp

Journal article Kortman, B. (1994). The eye of the beholder: Models of occupational therapy. *Australian Occupational Therapy Journal*, *41*, 115-122. Bennett, S. & Bennett, J. W. (2000). The process of evidence-based practice in occupational therapy: Informing clinical decisions. *Australian Occupational Therapy Journal*, *47*, 171-180.

Journal article not yet in an issue (DOI) Rodger, S., Clark, M., Banks, R., O'Brien, M. & Martinez, K. (2009a). A national evaluation of the Australian Occupational Therapy Competency Standards (1994): A multistakeholder perspective. *Australian Journal of Occupational Therapy*, doi: 10.1111/j.1440-1630.2009.00794.x

Book Wilcock, A. A. (1998). *An occupational perspective of health*, 2nd ed. Thorofare, NJ: SLACK Inc. **Chapter in a book** Law, M., Cooper, B. A., Strong S., Stewart, D., Rigby P. & Letts, L. (1997). Theorectical context for the practice of occupational therapy. In: C. Christiansen & C. Baum (Eds), *Occupational therapy:*

Enabling function and well-being, (2nd ed. pp. 72-102). Thorofare, NJ: SLACK Inc. **Electronic media** OT AUSTRALIA (2003). Australian Occupational Therapy Journal author guidelines. Retrieved 5 February, 2003, from http://www.blackwell-publishing.com/journals/aot/submiss.htm

Appendices These should be placed at the end of the paper, numbered in Roman numerals and referred to in the text. If written by a person other than the author of the main text, the writer's name should be included below the title.

Tables There is a limit of four tables or figures per manuscript. Tables should be self-contained and complement, but not duplicate, information contained in the text. Number tables consecutively in the text in Arabic numerals. Type tables on a separate sheet with the legend above. Legends should be concise but comprehensive - the table, legend and footnotes must be understandable without reference to the text. Vertical lines should not be used to separate columns. Column headings should be brief, with units of measurement in parentheses; all abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

Figures There is a limit of four tables or figures per manuscript. All illustrations (line drawings and photographs) are classified as figures. Figures should be cited in consecutive order in the text. Each figure should be labelled on the back in very soft marker or chinagraph pencil, indicating name of author(s), figure number and orientation. Do not use adhesive labels as this prohibits electronic scanning. Figures should be sized to fit within the column (80 mm), intermediate (114 mm) or the full text width (171 mm).

Line figures should be supplied as sharp, black and white graphs or diagrams, drawn professionally or with a computer graphics package. Lettering must be included and should be sized to be no larger than the journal text. Photographs should be supplied as sharp, glossy, black-and-white or colour photographic prints and must be unmounted. Individual photographs forming a composite figure should be of equal contrast, to facilitate printing, and should be accurately squared. Magnifications should be indicated using a scale bar on the illustration. If supplied electronically, graphics must be supplied as high resolution (at least 300 d.p.i.) files, saved as .eps or

.tif. A high-resolution print-out must also be provided. Digital images supplied only as low-resolution print-outs and/or files cannot be used.

Figure legends Type figure legends on a separate sheet. Legends should be concise but comprehensive - the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

***Australian Occupational Therapy Journal* online** Visit the *Australian Occupational Therapy Journal* homepage at http://wileyonlinelibrary.com/journal/aot for more information, and Wiley-Blackwell's web pages for submission guidelines and digital graphics standards at http://authorservices.wiley.com/bauthor/journal.asp and http://authorservices.wiley.com/bauthor/illustration.asp

The *Australian Occupational Therapy Journal* is available online at Wiley Online Library. Visit http://wileyonlinelibrary.com/ to search the articles and register for table of contents and email alerts.

SUBMISSION OF MANUSCRIPTS The *Australian Occupational Therapy Journal* is now using ScholarOne Manuscripts for online submission and peer review. **Please note:** This journal does not accept Microsoft Word 2007 documents at this time. Please use Word's 'Save As' option to save your document as an older (.doc) file type.