

Annotated Bibliography of Life Coaching and Health Research

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Introduction

While executive life coaching is quite prominent in the research forum as outlined in Grant's workplace and executive life coaching annotated bibliography (2005), studies pertaining to life coaching-related health outcomes are fewer in number and they have not been well recognized. Furthermore, although health-related studies focusing on life coaching as one form of health-related treatment have been conducted for some time, neither a summary nor an appraisal of the methodological soundness of these studies have been conducted. Therefore, the two-fold purpose of this annotated bibliography is: 1) to present a summary of critically appraised life coaching studies related to health research; and 2) stemming from that summary, to outline possible avenues for future health-related coaching research.

Methods

The following databases that were most pertinent to health-behaviour research were utilized to identify articles for this bibliography: Cumulative Index to Nursing and Allied Health Literature (1982-current), Ejournals, EMBASE, DISSERTATIONS ABSTRACTS ONLINE, ProQuest Nursing Journals, ProQuest Dissertations and Theses: Full Text (1861-current), ProQuest psychology journals, Pubmed (1966-current), PsycARTICLES, PsycINFO (1806-current), Scholar Portal Search, and SCOPUS. Google Scholar was also employed to search for research that may not have been included in the above databases. Search terms included: "health coaching"; "health and coaching"; "personal coach"; "personal coaching"; "nurse coaching"; and "life coaching". Finally, reference and citation lists from retrieved publications were reviewed for other articles that may have been missed. From this process, a combined collection of 209 journal articles, dissertations, and educational pieces were retrieved. In turn, 72 met the inclusion criteria:

- 1) the study must be written in English;
- 2) the intervention or treatment was a form of coaching, group coaching, life coaching, or derived from coaching; and
- 3) the study outcome was health related.

Each publication, hereafter- referred to as "article," was re-read following the inclusion/exclusion process, and was then read two additional times to ensure full understanding of the intricacies and nuances of each article. Each author has a background in methodological, critical appraisal of research. For enhanced consistency, the team utilized the criteria set forth by Cook and Campbell (1979) Greenhalgh and Taylor (1997) and Lincoln and Guba (1989) for identifying and suggesting options to

limit threats to internal and external validity (quantitative study designs) or data trustworthiness (qualitative designs). The articles were categorized based on particular health outcomes, and the categories are presented in alphabetical order by topic. The format for each article summary includes its purpose, operational definition of coaching, sample information, design/methodology, results, methodological limitations, strengths, and recommendations for future studies.

Results

Aging

Only one article looking at nurse coaching as a way to support healthy behaviour change in older adults was suitable for inclusion in the “aging” section.

Bennett, J. A., Perrin, N. A., Hanson, G., Bennett, D., Gaynor, W., Flaherty-Robb, M., Joseph, C., Butterworth, S., & Potempa, K. (2005). Healthy aging demonstration project: Nurse coaching for behavior change in older adults. Research in Nursing & Health, 28(3), 187-197.

Purpose: To compare the effects of nurse coaching and usual care on supporting healthy behaviour change in older adults.

Operational Definition of Coaching: Two registered nurses provided coaching. Both nurses received 24 hours of motivational interviewing training that consisted of didactic instruction and role-playing. Motivational interviewing, as outlined by DiClemente & Velasquez (2003), with participants consisted of: a) expressing empathy; b) supporting self-efficacy; c) working with resistance; and d) acknowledging and working with discrepancy between present behaviour and personal goals. The initial session was conducted face-to-face and lasted approximately 1 hour. During this session, the participant decided on and set a behavioural change goal to work on for the next 6 months. Participants chose the frequency and method (telephone or email) of contact. When telephone calls were made, the nurse conversed with the participant for approximately 10 to 15 minutes. Participants were contacted at least once per month for a minimum of 6 months to a maximum of 9 months.

Sample: One hundred and eleven participants (n = 66 for experimental group and n = 45 for the control group) aged 60 or over who had been diagnosed with one or more of the following five conditions: diabetes; lung disease; heart disease; arthritis; or neuromuscular disease.

Design/Methodology: Participants were recruited through direct mail, presentations to community groups, and printed notices in clinics and libraries. Potential participants telephoned the study office and were screened by research staff, set up with enrolment appointments, sent an introductory study packet by mail, and were randomized to the intervention or control group. Participants in the intervention group received coaching on behaviour change for 6 to 9 months. Control group participants were told to continue their usual care with their primary care physician. Health outcomes were measured at baseline and again at the end of the study.

Findings: Post measured indicated that health distress and illness intrusiveness were lower in the intervention group than the control group; however, there were no statistically significant differences in self-reported general health, levels of energy, or social/role activities.

Limitations: Typical to many styles of coaching, participants chose their own behaviour change goals. However, the study methodology to assess the outcomes of these goals was not consistent across participants and therefore, it is difficult to determine coaching’s impact. Participants chose the frequency of contact after the initial session. Both telephone calls and emails varied among participants; with such intervention differences, the same intervention was not being examined for its effect on health behaviour change. The control group and experimental group attended bimonthly social events. It is not clear

whether both groups were in contact with each other. If they were, compensatory rivalry may have impacted internal validity (Cook & Campbell, 1979).

Strengths: Randomization helped to ensure comparable study groups at baseline. Health status outcomes were measured using seven previously validated health outcomes from the model created for the Chronic Disease Self-Management Program at Stanford University and “coaching” was operationally defined which enhances replicability (Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001; Lorig, Sobel, Stewart, Brown, Bandura, Ritter, Gonzalez, Laurent, & Holman, 1999). Detailed screening procedures were used to allow individuals to participate in the study. Only two coaches were used to maintain consistency.

Recommendations: To maintain consistency, it is recommended that participants receive the same amount of coaching because participants who were coached for a shorter period of time may not have received enough coaching sessions to reach a statistically significant difference. Standardizing the number of coaching sessions would help eliminate the number of coaching sessions as an extraneous variable.

Given that there were no statistically significant results in self-reported general health, levels of energy, or social/role activities there is still a need for further exploration to assess if nurse coaching can impact those variables.

Anxiety/Stress/Emotional Health

Six articles examined the relationship of life coaching in lowering anxiety and stress levels in participants were suitable for inclusion in the “Anxiety/Stress/Emotional Health” section. Participants ranged from children to post-secondary students, to adults.

Broschous, S.K. & Saunders, D.J. (2001). Peer coaching. Nurse Educator, 26(5), 212-214.

Purpose: To reduce nurse student anxiety during his/her first clinical experience with patients.

Operational Definition of Coaching: Coaching took place for two days during the first four hours of junior students’ clinical shift to support and assist junior students during clinical rounds to reduce stress. Five senior students were responsible for coaching three junior students. A coaching video was shown to coaches (The helping hand, 1990).

Sample: A total of 25 junior students and 20 senior students participated in this study.

Design/Methodology: The 20 senior students received four hours of training before coaching the junior students. The training session involved viewing an orientation video on coaching, followed by role playing and discussion with faculty. On the first two days of clinical rotation for the junior students, senior students were coaching junior students for the first four hours of each day. Following those first two days of clinical work, junior students and senior students (separately) discussed the coaching intervention with faculty members. Both the junior and senior students answered four and seven open-ended questions respectively and both completed separate faculty developed questionnaires to assess the experience.

Findings: The junior students found the coaching beneficial and indicated a decreased level of anxiety. The senior students also found the coaching beneficial, to practice leadership skills.

Limitations: How the participants and coaches were selected is unclear which decreases replicability. Descriptive/demographic information is also lacking on the participants making the study’s transferability questionable (Lincoln and Guba).. Since this study has a qualitative research component, the researchers’ perspectives should be included to account for any potential biases (Greenhalgh & Taylor, 1997) – no such information was provided. The researchers used 11 open-ended questions, which were not provided – this limits replicability. There is no information whether member-checking or other tools to enhance credibility were used (Greenhalgh & Taylor; Guba and Lincoln, 1989). In addition, the questions used on the questionnaires developed by faculty members were not available. There are very few quotes available

from the participants' responses, which further reduces credibility (Guba & Lincoln, 1989) on the inferences made from these discussion sessions. No information was provided on how the data was analyzed.

Strengths: Provided a reference to review the type of coaching skills used which increases replicability.

Recommendations: It is recommended that: information on recruitment and consent be included for the purpose of replication; researcher perspectives be revealed to help readers understand the unique perspective the researchers bring to the study; participants' demographic information be included to help readers understand to whom the results may be transferred; a sample of the open-ended questions used at the end of the study should be shared to enhance replicability; the questionnaires (or a reference for retrieving them) be provided for future researchers to replicate the study; sufficient quotes be included to support findings and strengthen credibility; and the method of data analysis be included to outline the confirmability of findings; including missing details is important for enhancing the dependability of this study's findings.

Campbell, M. A. & Gardner, S. (2005). A pilot study to assess the effects of life coaching with year 12 students. In Cavanagh, M., Grant, A. M., & Kemp, T. (Eds.), Evidence-based coaching (pp. 159-169). Australian Academic Press: Brisbane.

Purpose: To examine the effects of individual life coaching on enhancing students' academic performance, emotional well-being, problem solving abilities, and relationships with others. This study also compared individuals who chose to participate in life coaching and those who did not.

Operational Definition of Coaching: Coaching was defined as working with a population of normal, non-clinical individuals with the emphasis of enhancing personal growth. Coaching was seen as an ongoing, confidential, individual relationship between the coach and the individual (Witherspoon & White, 1996). Most students attended one session per two weeks for the first two terms of the year over a 6 month period. The first session consisted of establishing rapport, outlining the process of coaching, and discussing students' goals in relation to study goals, sporting goals, managing stress and achieving a balanced life, money and health concerns. During subsequent sessions, short and long term goals were discussed, strategies to achieve goals and motivation techniques were examined, achievements were celebrated, and empowerment and reflection exercises were conducted. After 4 months, face-to-face counselling was supplemented with email counselling.

Sample: Thirty-six students in year 12 in a Catholic coeducational college in Australia.

Design/Methodology: One hundred and four students were invited to participate in the study and 71 volunteered. Due to resource restrictions, only 36 students were randomly chosen for the treatment and two control groups. The first control group comprised of participants who volunteered to participate in the coaching study and the second control group was selected from individuals who did not want to participate in life coaching. Participants in the treatment group received life coaching sessions. All groups contained 12 participants who were matched for age, gender, and academic achievement. Questionnaires were administered before and 6 months after the intervention. Individuals in the second control group participated in a focus group that examined why they did not want to receive life coaching. Teachers also evaluated all participating students on managing relationships, social standing among peers, effort in academic work, and ability to solve life's problems.

Findings: Pre-test questionnaire results indicated that students who were going to have coaching perceived themselves as less able to cope with relationships than those that did not want coaching. Students who did want coaching reported lower self-esteem than those that did not want coaching. At 6 months post-intervention, there were no differences on any assessment scores.

Limitations: Compensatory equalization of treatment (Cook & Campbell, 1979) may have occurred because students knew who was and who was not receiving life coaching. Not all coaching participants received an equal number of coaching sessions which may have impacted results. No information on

coaching session lengths was provided, decreasing study replicability. Information on supplemental email coaching was not provided.

Strengths: There were no significant differences among the three groups as all participants were matched for age, gender, and academic achievement. A reference was provided regarding the coaching method used.

Recommendations: It is recommended that students be randomized into treatment or control groups without having other students find out their allocation to minimize the chance of compensatory equalization of treatment and ultimately impacting internal validity. Each participant in the coaching arm should receive an equal number of coaching sessions to reduce any confounding variables and ensure that coaching was the reason for change. More information regarding coaching sessions and supplemental email coaching would help increase the readers understanding of what occurred during those sessions and help future researchers wanting to conduct similar research.

Gyllenstn., K., & Palmer, S. (Autumn 2005). Can coaching reduce workplace stress? A quasi-experimental study. International Journal of Evidence Based Coaching and Mentoring, 3(2), 75-85.

Purpose: To assess the effectiveness of coaching to reduce workplace stress.

Operational Definition of Coaching: An operational definition for coaching was not provided. The coaching lasted eight months.

Sample: Thirty-one participants completed the study. Sixteen were in the coaching group and 17 were in the control group. All participants (mean age 32 years) were individuals working full-time at a finance business in the U.K.

Design/Methodology: This study was a “quasi-experimental and a non-equivalent groups pretest-posttest design.” Coaches contacted employees to participate in the study. Those in the coaching group filled out a validated questionnaire regarding demographic variables, the number of coaching sessions and effectiveness of those sessions, job satisfaction, stressors and strain before and after each coaching session. The control group filled out a questionnaire at the start and end of the study.

Findings: Work-related stress decreased in both the coaching group and control group. **Limitations:** Very little information was provided on the number of coaching sessions, the duration of the coaching sessions, and the type/skills used during the coaching sessions – this reduces replicability. Since the study took place for eight months, employees may have adapted to his/her job over time and reduced stress, which affects the reliability of the study. Internal validity was questioned as random assignment was not used and the two groups were non-equivalent. Both groups worked in the same work place and may have disseminated information between groups. Compensatory rivalry (Cook & Campbell, 1979) may also have taken place and as a result the control group may have sought other ways to decrease work-related stress.

Strengths: Clear purpose and hypotheses. References were provided for the questionnaires used in the study.

Recommendations: Providing an operational definition of coaching with references available regarding the type of coaching used would increase replicability and the readers understanding of what actually occurred during those sessions; using a control and treatment group that are equivalent would help control for confounding variables and help determine whether it was the coaching that produced the reported change; if possible, randomly assigned participants to the control and treatment group to ensure matched groups to reduce any confounding variables; collect information on any participants career advancements or demotions to eliminate extraneous variables; choose participants that can be separated to eliminate rivalry regarding group assignment; ensuring that the control group does not learn information presented to the treatment group and the control group subsequently changing their behaviour would decrease an internal threat to validity known as diffusion of treatment; for future studies, choose participants from several finance firms to increase generalizability.

Gyllensten, K. & Palmer, S. (2005). The relationship between coaching and workplace stress: A correlational study. International Journal of Health Promotion and Education, 43(3), 97-103.

Purpose: To compare the effects of workplace coaching versus no workplace coaching on stress.

Operational Definition of Coaching: Workplace coaching was defined as a results oriented process. Coaches facilitated the enhancement of work performance through self-directed learning and personal growth of the coachee (Grant, 2001). No other information on coaching was provided.

Sample: 103 participants from British and Scandinavian organizations. All participants were managers.

Design/Methodology: 31 participants from Britain filled out paper questionnaires while 5 individuals filled out internet-based questionnaires. This study used a cross-sectional correlational design and multiple regression to analyze the data. Data was collected from two groups of participants: individuals who had participated in workplace coaching and individuals who had never attended workplace coaching.

Findings: Participation in coaching was not a significant predictor of stress or strain in the workplace. In other words, coaching could not predict lower levels of stress or strain in the workplace.

Limitations: Participants were not asked if they had participated in any other stress relief programs which would ensure that it was only the current intervention that led to the above mentioned results. It was also not clear if coached participants had experienced the same number of coaching sessions implicating replicability and an extraneous variable that may have impacted results. British and Scandinavian coaching styles may have been different which may have impacted results. Method of obtaining data from both Britain and Scandinavia was not uniform and may have impacted results.

Strengths: The study met the minimum number of participants needed to significantly assess each predictor variable.

Recommendations: It is recommended that future studies ensure every participant receives the same type and same number of coaching sessions to guarantee consistency and decrease any confounding variables from impacting results. It is recommended that participant responses be obtained using the same questionnaire format to maintain consistency.

Gyllensten, K., Palmer, S., & Farrants, J. (2005). Perceptions of stress interventions in finance organizations: Overcoming resistance towards counselling. Counselling Psychology Quarterly, 18(1), 19-29.

Purpose: To acquire knowledge of finance organizations' views of stress and stress interventions.

Operational Definition of Coaching: No operational definition of coaching was provided.

Sample: The seven participants were from seven different organizations and included a senior manager, a health and safety manager, and five human resource managers.

Design/Methodology: Participants were sent letters and contacted by telephone. Data was collected using semi-structured interviews and analyzed using interpretative phenomenological analysis. Interviews were tape recorded and transcribed. Transcripts were analyzed for emerging themes.

Findings: Participants reported negative attitudes toward counselling and psychiatry to help alleviate stress. Coaching emerged as an alternative to counselling, because it did not share the same negative stigma. However, coaching was seen as an intervention only available to senior management.

Limitations: A small sample size was used with views representing only one person per organization. Interviews were only semi-structured and not always consistent. The researchers' ontological and epistemological views were not reported and as such, their biases/opinions may have impacted results.

Strengths: Use of interpretative phenomenological analysis to explore insider views of participants and discover common themes. Use of tape recorder and transcribed data made for an accurate qualitative analysis of interviews. Two colleagues were used to analyze the transcript which increases confirmability. Supporting quotes were provided to increase credibility.

Recommendations: It is recommended that future studies include a larger sample of individuals from a variety of organizations to increase transferability. Including researcher perspective would allow readers to understand the slant/biases that may be present.

Havighurst, S. S., Harley, A., & Prior, M. (2004). Building preschool children's emotional competence: A parent program. Early Education and Development, 15(4), 423-447.

Purpose: To examine the effects of a parenting program that included emotion coaching on parenting skills, children's emotional competence, behaviour problems, and social skills.

Operational Definition of Coaching: Emotion coaching was outlined by Gottman, Katz, and Hooven (1996; 1997). Its five aspects were noted as: being aware of the child's emotion; viewing the child's display of emotion as a time for intimacy and teaching; helping the child verbally label emotions; validating the child's emotions; and helping the child problem solve through difficult emotions. A clinical psychologist and a parent educator taught parents emotion coaching techniques.

Sample: Fifty parents of children aged 4 to 5.

Design/Methodology: Information fliers were sent home with children in kindergarten classes in selected locations. Parents completed assessment measures twice during the intervention, again at the end of the program and at 3-months follow-up. The program was conducted by a clinical psychologist and a parent educator over the course of 1 week and consisted of six 2-hour sessions. The parents' sessions followed a structured manual and included: psycho-education; group discussions and brainstorming; small group exercises; video examples; group leader demonstrations; and small group role-playing. All exercises aimed to build the five aspects of emotion coaching.

Findings: Parents reported they were: more encouraging of their children's emotional expressions; frequently using emotion-focused approaches with their children; and less critical and dismissive of their children's emotional expressions. Parents also reported their children showed less emotional negativity and fewer difficult behaviours.

Limitations: The program was offered to four different groups of parents at four different times (two daytime and two night time sessions). Each group had different demographics and baseline measures reducing generalizability. Parents were not screened for prior engagement in a parenting program. If parents were in another program, it would be unclear whether the results were from the current intervention. This study did not have a control group which limits the reader's ability to determine whether parents receiving no treatment would have found similar results. Parental participation in the program did not necessarily mean that emotion coaching was used with the children, which was the purpose of the study.

Strengths: The program was consistently delivered to each group of parents by two individuals a structured protocol for the program was used with every parent group to ensure consistency.

Recommendations: A qualitative questionnaire is suggested to examine if parents used emotion coaching. Parents should be asked about their perceptions of emotion coaching because their perceptions may have affected whether they used the emotion coaching or not. If the parents were not happy with the program, researchers could use this information to tailor another program to increase adherence. It is recommended that a control group be included to compare the effects of treatment and no emotion coaching training.

Although the following six studies assessed the effectiveness of life coaching on a similar health construct, surprisingly different results were found. Some studies found that coaching did decrease workplace stress, while others did not find that coaching had an effect on minimizing anxiety/stress. A difference was found in emotional stability between those who wanted to be coached and those that did not and coaching was perceived as a more viable option than counselling due to its surrounding stigma. Given that all of these six studies were different in their purpose and findings, further research is required

to gain more information on whether life coaching is effective at decreasing stress/anxiety and increasing emotional health.

Asthma

Four studies met the inclusion criteria to be included in the “Asthma” section. Asthma, as defined by the Asthma Society of Canada (2007), is a “chronic inflammatory disease of the airway that causes shortness of breath, tightness in the chest, coughing, and wheezing.”

Berg, J., Tichacek, M.J., & Theodorakis, R. (February 2004). Evaluation of an educational program for adolescents with asthma. The Journal of School Nursing, 20(1), 29-35.

Purpose: To evaluate the effectiveness of the Power Breathing program with individual coaching on asthma knowledge and health status.

Operational Definition of Coaching: Participants received three 15-minute coaching sessions over a three-week period. The asthma coaches were nurses. The coaching was seen as a separate intervention from the Power Breathing program. The tailoring strategies used for these sessions were based on Social Learning Theory (Bandura, 1977).

Sample: Thirteen adolescents, 15-18 years in age, with asthma participated in this study. Students with other chronic respiratory conditions were excluded from the study.

Design/Methodology: This study followed a quasi-experimental design. Students at one high school in Los Angeles with asthma were recruited by a mass mail out to households with adolescents in grades 9-11. Three weeks after the letters were sent out, follow-up calls were made to screen families. Thirteen students participated in the study and were present for the first day of data collection. On this first day of data collection, researchers administered the Child Health Survey for Asthma during school hours in a small room in the school. For the next two weeks, students participated in three 90-minute sessions as part of the Power Breathing program. Two sessions were during the first week and one session was during the second week. The Power Breathing program used group sessions and discussed asthma, triggers, causes, and symptoms during the first sessions. The second session concentrated on medications and the third session focused on social and emotional aspects of living with asthma. Three weeks of individual coaching took place after the Power Breathing program. Each student met with a coach for fifteen minutes to help tailor the education program to his/her needs. Student health status was assessed using the Children’s Health Survey for Asthma. This instrument was administered at the beginning of the study, after the Power Breathing program, and six-months after the coaching arm of the study. The Power Breathing program was assessed using the Power Breathing Evaluation Tool which was given after the program and before the coaching intervention. Focus group interviews were conducted at the end of the coaching sessions.

Findings: Participants found that the knowledge gained from the Power Breathing program helped improve trigger avoidance (54% of participants reported improvement), increase medication adherence (100% of participants), and decreased episodes of asthma attacks (54% of participants). The coaching sessions helped apply the information learned during the Power Breathing sessions.

Limitations: As described by the researchers, participant data could not be compared at various time points due to the sampling method, small sample size, and the use of self-report data. It is not clear how many nurse coaches were used and what training was provided to them before the coaching session took place which reduces replicability. Detailed information on the focus groups is lacking. For example, were the focus groups audiotaped, and how many participants were in the focus group(s)? This information could determine how accurate the responses were and how willing the participants may have been in disclosing information. Information regarding who was used as the moderator during the focus group(s) was not provided. If a researcher was a moderator or in the room, participants may have provided answers

they knew the researchers wanted to hear – also known as the Hawthorne effect (Neutens & Rubinson, 2001).

Strengths: Quotes from the exit interview were provided from both participants and coaches to confirm themes presented. Three independent reviewers confirmed themes presented, which decreases the chance of bias from the researchers. Topics covered in each coaching session were presented which helps increase replicability. A reference was provided on the theory behind the tailoring used during coaching. This allows readers to learn or replicate the methods used during the coaching sessions. The instrument tools were described in detail.

Recommendations: It is recommended that detailed information on the focus groups be provided to increase replicability for future researchers as well as providing more information on the coaches used in this study.

Hovell, M. F., Meltzer, S. B., Wahlgren, D. R., Matt, G. E., Hofstetter, C. R., Jones, J. A., Meltzer, E. O., Bernert, J. T., & Pirkle, J. L. (2002). Asthma management and environmental tobacco smoke exposure reduction in Latino children: A controlled trial. Paediatrics, 100(5), 946-956.

Purpose: To compare the effects of asthma management education plus coaching and asthma management education alone on reducing environmental tobacco smoke exposure among asthmatic Latino children.

Operational Definition of Coaching: Coaches were non-professional Latinas from the same community as the participants. Some coaches had limited college education while a few were completing their masters in public health or psychology. All coaches received training through an 8-hour workshop. Families received seven in home 30- to 45-minute coaching sessions over three months. Coaching included examining previous smoking behaviours, setting behavioural goals, ongoing shaping toward target behaviour, and once establish, maintenance of new behaviour. Coaching consisted of contingency contracting and various shaping procedures (Mattaini & Thyer, 1996).

Sample: Two hundred and four families with an asthmatic child. Children must have: been between the ages of 3 and 17; had Latino or Hispanic natural parent(s); lived in a home with at least 1 smoker; and reported exposure to at least six cigarettes in the previous week.

Design/Methodology: Families were recruited from multiple agencies and through the media in San Diego County, California. Baseline interviews were conducted to examine eligibility requirements. All families were provided with asthma management education the week after the first baseline measures and assigned at random to coaching or control conditions. A trained Latina assistant delivered asthma management education in English or Spanish. Education was offered as one or two in-home sessions for a total time of approximately 2 hours. Families in the coached condition, received seven 30- to 45-minute coaching sessions over 3 months. Measurements were taken again at 4 (post-intervention), 7, 10, and 13 months.

Findings: Between the 2-week and 4-month measures, children in the coached group were exposed to significantly fewer cigarettes ($p < 0.01$) than those in the control group. Levels of environmental tobacco smoke exposure decreased for both groups at the 13-month follow-up.

Limitations: Families were not asked whether they had previously participated in asthma education. Previous knowledge may have influenced results of the current study. It is not clear whether all coaching sessions were consistent which may have impacted results.

Strengths: This study had successful random assignment, high cohort retention, and reliable and valid measures.

Recommendations: It is recommended that future studies control or report previous asthma education to ensure that the results are due to the current intervention and not previous education. All experimental participants should receive consistent coaching to control for confounding variables such as duration, coach training etc.

Knight, D.D. (December 2005). Expanding asthma awareness in adolescents: a pilot study. Unpublished Doctoral Dissertation, University of Hawaii at Manoa.

Purpose: To increase asthma awareness in adolescents in Hawaii and to determine whether a coaching program can increase self-management behaviours and increase controller medicines.

Operational Definition of Coaching: Coaching took place during physical education class. The coaching sessions served as an educational tool. An operational definition was not provided.

Sample: Phase I of the study included all Freshman in the physical education program (n=430). Phase II included Freshman with asthma in the physical education program (n=38). Participants were male and female 13-15 years of age.

Design/Methodology: This study utilized a quasi-experimental design with no control group. Pre and post-test measurements were administered. Phase I of this study involved Asthma Awareness Training using the asthma training program video. Phase II of this study commenced two weeks after the initial training video. Coaching sessions took place during the physical education class as a group. Individual coaching sessions were also available for students self-referred or faculty-referred to the school based clinic for asthma related concerns. The Asthma General Knowledge Questionnaire, Paediatric Asthma Quality of Life Questionnaire, and the PAQOLQ were the measures used for this study.

Findings: Asthma awareness increased ($p < 0.001$). There were no statistically significant results for changes in quality of life and self-management behaviours.

Limitations: Very little information is provided on the coaching used in this study. A reference was not provided for readers to review. The sample size was small resulting in statistically insignificant results. The coaching lasted for the semester, but it is unclear how often and for what duration the coaching took place – this decreases replicability. Due to logistical problems, students had to take home the posttest measurement and return the following day. Because the researcher was not able to observe each student filling out the questionnaire, it is unclear whether the results are credible.

Strengths: The questionnaires and PowerPoint information were provided for readers to review. Theoretical frameworks were provided which strengthens the rationale for conducting the study.

Recommendations: It is recommended that the sample size increase to determine whether it would impact the non-significant results; increasing the study's length would allow researchers to accurately determine changes in self-management behaviours; including detailed information on the coaching would help future researchers; assessing the dose-response impact of coaching may be of interest to future researchers in order to gain information on any differences between those who did/did not get one-on-one coaching versus group only coaching.

Smith, S. R., Jaffe, D. M., Fisher Jr., E. B., Trinkaus, K. M., Highstein, G., & Strunk, R. C. (2004). Improving follow-up for children with asthma after an acute emergency department visit. The Journal of Pediatrics, 145(6), 772-777.

Purpose: To compare the effects of telephone asthma coaching plus a monetary incentive and no intervention on asthma symptoms and parent adherence to follow-up asthma appointment for their children.

Operational Definition of Coaching: An individual with a master's degree in social work delivered the coaching. An operational definition of coaching was not provided.

Sample: Five hundred and twenty-seven parents who brought their children, between the ages of 2 and 12, to St. Louis Children's Hospital Emergency Department for treatment of an acute asthma exacerbation.

Design/Methodology: Parents and children were recruited in the emergency department of St. Louis Children's Hospital. Participants were randomly assigned to the telephone coaching plus a monetary incentive or control group. Coached participants were telephoned twice after the initial visit and sent a

check for \$15 if they reported for a physician's visit. Control participants received no intervention. All participants were telephoned at 2 weeks and 6 months after the emergency department visit. Follow-up phone calls examined any asthma symptoms that may have occurred and whether children saw a physician after the initial emergency department visit.

Findings: There was a significant difference ($p < 0.0001$) in the percentage of parents who took their children to a follow-up appointment between the telephone asthma coaching group and the control group. After two weeks, the intervention group had a significantly greater ($p = 0.037$) decrease in mean number of days and nights with symptoms from baseline to 2 weeks than the control group. There were no significant differences between the groups at 6 months.

Limitations: The length of each call was not stated. Not all parents in the coaching group were coached as they may have been away or unavailable for the coaching call and may have impacted results. Children were not screened for asthma severity as this may have influenced asthma symptoms being present after the initial emergency department visit. An operational definition of coaching was not provided.

Strengths: One telephone coach was used to deliver consistent information to participants.

Recommendations: It is recommended that all individuals in the coaching arm of the study receive coaching to maintain consistency. More coaching details should be provided to help portray the coaching relationship being studied. Future researchers may be interested in researching the differences between telephone coaching and asthma severity.

The four studies presented in this section have reported that coaching (in different forms) has had a significant effect at increasing asthma knowledge, awareness, and management. Given that these studies are the first of their kind, future research is still needed to fortify coaching as a treatment options for individuals with asthma.

Attention Deficit Hyperactivity Disorder (ADHD)

Two articles met the inclusion criteria to be included in the "ADHD" section. As defined by the National Institute of Mental Health (2007), an individual with ADHD is likely to experience symptoms of inattention, hyperactivity, and impulsivity. This disorder is most likely to occur in early childhood.

Plumer, P.J., & Stoner, G. (August 2005). The relative effects of classwide peer tutoring and peer coaching on the positive social behaviors of children with ADHD. Journal of Attention Disorders, 9(1), 290-300.

Purpose: To assess the effectiveness of Classwide Peer Tutoring (CWPT) and peer coaching on peer social behaviours of children with ADHD.

Operational Definition of Coaching: Coaching was provided by one of the participant's peers on a daily basis. At the beginning of each day, the coach and participant would set a goal to be achieved by the end of the day. The coach provided positive feedback and reminders of the goal set throughout the day. At the end of the day, both the coach and participant filled out a 5-point rating section of the daily goal form. An actual school or type of coaching was not provided.

Sample: Three students (two female, one male) with ADHD in grades three and four. Two of the students had been diagnosed by a physician with ADHD and the third participant had been referred for diagnosis.

Design/Methodology: Classwide Peer Tutoring was implemented by a graduate student into the classroom for 20 to 25 minutes per day for three days per week. The teacher from each classroom nominated a student coach. Each coach was paired with one of the three participants. Before coaching began, students were provided with a manual on coaching and the role of the coach in the classroom. At the end of each day, participant and coach completed a 5-point rating section of the daily goal form. Scores were tallied up for each participant and at the end of the week; total points corresponded to a

reward. Observers for this study were graduate students and one undergraduate student. Observers participated in academic (in the classroom) and social settings (at lunch and recess) to assess the social behaviours of the three participants. All observers were trained and tested on inter-observer agreement.

Results: Peer social behaviour was enhanced with the addition of peer coaching to CWPT during recess and lunch (participant 1 increased from a mean score of 37 to 67 with the addition of peer coaching at recess and 16 to 52 at lunch; participant 2 increased from a mean score of 55 to 74 at recess and 12 to 76 at lunch; participant 3 increased from a mean score of 71 to 95 at recess and 65 to 81 at lunch).

Limitations: An exit interview was administered, but there were insufficient quotes to help assure credible results (Greenhalgh & Taylor, 1997). It is not clear whether the peer coaching or the CWPT was the reason for the enhanced social behaviour. As noted by the researchers, teachers were not blinded to the study's purpose. The teachers were invested in the program and may have biased his/her students' perceptions. Only one boy participated in the study, and as mentioned in the article, more males than females are diagnosed with ADHD. The Hawthorne effect may have played a role as students knew they were being watched by the observers (Neutens & Rubinson, 2001).

Strengths: The CWPT was well explained. Background information on coaching was provided and the goal of the coaching was clearly outlined. Several measures were used to ensure the participants were qualified for the study. An interview was conducted to assess consumer satisfaction. Inter-observer agreement was obtained to ensure agreement between the student observers. Observations were conducted in an academic and social setting. This allows researchers to determine what contexts this program increased social behaviours.

Recommendations: Increasing sample size and increasing the number of male participants would increase generalizability; Future researchers may be interested in separating CWPT and coaching to determine the effect of these two interventions separately; blinding the teachers to the study's purpose would help eliminate possible bias.

Sonuga-Barke, E. D. S., Daley, D., Thompson, M., Laver-Bradbury, C., & Weeks, A. (2001). Parent-based therapies for preschool attention-deficit/hyperactivity disorder: A randomized controlled trial with a community sample. Journal of the American Academy of Child and Adolescent Psychiatry, 40(4), 402-408.

Purpose: To compare the effects of parent training with coaching, parent counselling and support, and a waiting list control on child attention-deficit/hyperactivity disorder (ADHD).

Operational Definition of Coaching: Coaching consisted of teaching and practicing behavioural strategies that concentrated on reducing children's defiant and difficult behaviours associated with ADHD (Weeks, 1999). Parents were coached by one of two specially trained health visitor therapists. Coaching sessions were 1-hour home visits over 8 weeks.

Sample: Seventy-eight three-year old children displaying preschool ADHD enough to warrant clinical intervention and their parents.

Design/Methodology: Children were randomly assigned to either the parent training with coaching group, parent counselling and support group, or the waiting list group. Parents in the parent training and coaching group were educated about ADHD and behavioural strategies for increasing attention and behavioural organization and reducing defiant and difficult behaviours. Parents in the parent counselling and support group received no training in behavioural strategies, but were given the opportunity to explore their feelings about their child and the impact their child has had on the family unit. Both interventions consisted of 1-hour home visits over 8 weeks by one of two specially trained health visitor therapists. Measures of child behaviour and maternal well-being were taken before the intervention, at 8 weeks, and at 23 weeks.

Findings: ADHD symptoms were significantly reduced in the parent coaching group compared to the wait list control ($p = 0.001$) and the parent counselling and support group ($p = 0.002$). Mothers' sense of

well being increased significantly in the parent training and coaching group compared to the wait list control ($p = 0.0001$) and the parent counselling and support group ($p = 0.005$).

Limitations: Significant differences between groups existed at baseline and as a result these differences may have impacted results. Children's levels of ADHD and parents' coping skills were not equal across the three groups which may have also impacted results. Without matched comparisons, it is difficult to conclude that it was the treatment itself that contributed to the changes demonstrated. Children and parents were not asked if they had participated in any other ADHD program in the past as this may have enhanced their coping skills and skewed the results.

Strengths: Two trainers delivered consistent interventions to all participants. Valid and reliable measures evaluated ADHD symptoms and maternal well being accurately. Detailed coaching protocol was used in the parent training and coaching group.

Recommendations: It is suggested that groups be equal at baseline to measure the effect of each intervention.

The main finding from these two studies is that coaching does have an effect at helping to manage symptoms associated with ADHD. Further research is still required using larger sample sizes and homogenous groups at baseline.

Brain/Head Injury

Wheeler (2004) reported that traumatic brain injury (TBI) is the leading cause of death and disability in young adults. Given that the survival rate of adults who have experienced a TBI is increasing, research is required to help those who return back to society with residual cognitive, psychosocial, behavioural or physical impairments. One study was found that tested the effectiveness of a life coaching program in aiding individuals with a TBI.

Wheeler, S.D. (2004). The effectiveness of a community based life skills training program for traumatic brain injury (Doctoral dissertation, Virginia Commonwealth University, 2004). Dissertations Abstracts Online, 181.

Purpose: Assessing the outcome of a community based life skills training program, using a life coaching model, for individuals with a traumatic brain injury (TBI).

Operational Definition of Coaching: The Life Coaching Model (Jones et al., 1991) used in this study puts the "Whatever it Takes" (Willer & Corrigan, 1994) approach into practice. The Life Coaching Model strives to achieve community participation for individuals with a TBI.

Sample: Thirty-six participants completed the study (18 in the treatment group, 18 in the comparison group). Subjects were aged 18-55. All participants were able to give voluntary consent to participate in this study.

Design/Methodology: A quasi-experimental design was used for this study. Participants in the treatment group were recruited through a convenience sample from a community based life skills training program. The comparison group was recruited from neurological and neuropsychological practices, outpatient clinics, and community based services for individuals suffering from a TBI. After consent was obtained, participants filled out a demographic questionnaire, the Community Integration Questionnaire (CIQ), and the Satisfaction with Life Scale (SWLS). The treatment group took part in an intensive life skills training program in southern West Virginia. The CIQ and SWLS were completed again after a 90-day follow-up. The life skills training program was guided by a licensed clinical psychologist.

Findings: Researchers found statistically significant improvements in community integration at home ($p = 0.01$) and in productivity ($p = 0.02$).

Limitations: Although The Life Coaching Model was described in great detail, the researchers did not mention how many days per week participants took part in the program and how many hours per day. The researchers provided the remaining limitations: The researchers did try and match the treatment and control group to improve methodological issues demonstrated in previous research. However, the participants varied too dramatically to accurately report a matched comparison. Without matched comparisons, it is difficult to conclude that it was the treatment itself that contributed to the changes demonstrated. A relatively small sample size was used which limits generalizability. The CIQ lacked sufficient specificity to accurately capture some aspects of the gains made by participants. Some participants may have still been in the program while the 90-day follow-up took place, possibly skewing results.

Strengths: A detailed description with multiple references was provided on The Coaching Model. The instruments used were described in detail.

Recommendations: It is recommended that information on the length of the training program would help future researchers interested in conducting similar studies; recruiting participants with matched characteristics would increase the chances that the only difference between the groups would be if they received or did not receive the intervention; increasing sample size would strengthen generalizability; ensuring participants are not in the program during follow-up measures to guarantee accurate results.

The following first-of-its-kind study demonstrated that a life coaching model is effective at increasing community integration at home and increasing productivity levels. Further research is still required to assess the impact of a coaching model as an effective intervention to increase social integration.

Breastfeeding

The focus of the following section was to assess the effectiveness of a life coaching intervention on increasing breastfeeding initiation and duration. Only one study met the inclusion criteria and was based in Scotland.

Hoddinott, P., Lee, A. J., & Pill, R. (2006). Effectiveness of a breastfeeding peer coaching intervention in rural Scotland. BIRTH, 33(1), 27-36.

Purpose: To compare the effects of group-based and one-on-one peer breastfeeding coaching with breastfeeding data collected in rural Scotland on improving breastfeeding initiation and duration.

Operational Definition of Coaching: Coaching was provided in both a group setting and in a one-on-one fashion by an outside facilitator or by the women themselves. Group-based breastfeeding coaching consisted of providing information about breastfeeding and allowing women to learn in an observational and experimental manner. One-on-one peer coaching was established for some women. A reference for the coaching method was not provided.

Sample: Three hundred and forty-five women participated in group-based breastfeeding coaching.

Design/Methodology: Pregnant women were recruited to participate in group-based breastfeeding coaching by midwives and health visitors working in the study area. The study took place in four geographical areas in northeast Scotland. Five breastfeeding groups were established and each followed fixed aims and objectives. Each group had a midwife or a health visitor facilitator to provide information and professional support. Each group differed in formality and information delivery. One-on-one peer breastfeeding coaching was also provided by actively breastfeeding women and occurred either within or outside the group setting. Coaching was either arranged formally by a group facilitator or informally through the group. The intervention lasted 9 months; however, each group varied in timing and frequency of sessions.

Findings: Breastfeeding increased significantly from birth until 2 weeks, with increases until eight months, but losing statistical significance over time.

Limitations: No operational definition of coaching was provided. There was no uniformity among the five groups. Each group varied in timing, frequency, group size, group discussions, group formality, and information provided. With so many group variances, it is not clear if the same intervention occurred in each group. Women were not screened for prior knowledge of breastfeeding as this may have affected women's decisions to breastfeed.

Strengths: Detailed recruitment information was used to obtain participants.

Recommendations: An operational definition of coaching would help readers understand the type of coaching used and the amount of coaching needed to replicate results. Group-based breastfeeding coaching groups should conduct the same coaching sessions to maintain consistency. Matched groups would help determine whether the intervention had an effect.

Although increases in initiation and duration were observed until two-weeks, statistical increases were not observed after this point. Further research is required to explore if coaching can statistically impact initiation and duration of breastfeeding over a longer period of time.

Burn Injuries

Only one study was found that met the inclusion criteria to be included in the 'burn injuries' section.

Elliott, C.H. & Olson, R.A. (1983). The management of children's distress in response to painful medical treatment for burn injuries. Behaviour Research and Therapy, 21(6), 675-683.

Purpose: To assess the effectiveness of a stress management program in reducing stress of children undergoing treatment for burns.

Operational Definition of Coaching: Four pediatric psychology interns acted as coaches for this study. The purpose of coaching was to decrease stress levels during painful treatments. The coaching sessions were used to distract patients, teach relaxation breathing and emotive imagery.

Sample: Eight patients with burns on 5-68% of his/her body, ranging in age from 5-12 years of age were included in this study.

Design/Methodology: A combined multiple-staggered baseline and reversal design was utilized. Four out of the eight patients completed baseline measurements only. The scale used for this measurement was The Burn-Treatment Distress Scale. Observers were used to assess the distress level during a series of different treatments. The observers were two medical students. The four children receiving the coaching intervention initially spent 45 minutes with the psychologist.

Findings: The program was moderately effective in reducing distress levels. A reduction in distress with a mean of 36.7% was observed. Distress levels increased when the coach was not in the room.

Limitations: This study did not provide information on how many coaching sessions each participant received throughout the study and for how long – this reduces replicability. Although measures were put into place, observer bias may have influenced results. It is unclear after this initial assessment how often the therapist was coaching the participant during treatment. It is unclear when post-treatment measures were collected. Information on when post-test measures were administered was not provided. Since four therapists were used, each therapist may have had a different way of coaching participants thereby skewing results. Because the length of the study was not revealed, it is unclear whether maturation (Cook & Campbell, 1979) occurred, affecting internal validity. Apparently the therapists were trained in the coaching methods used, but it was not reported by whom and for how long, which reduces replicability.

Participants ranged in percent body burned significantly. The one participant with 5% body coverage may not have seen as dramatic a decrease in distress as the participant with 68% body burned.

Strengths: References were provided for each distress reducing method – this allows other researchers to investigate and potentially replicate those methods.

Recommendations: It is recommended that future researchers include logistical information on coaching sessions and provide information of when post-test measurements were administered to increase replicability; using one to two therapists would maintain consistency and would eliminate the number of coaches as a confounding variable; providing information of length of study and including information on training received by therapists would help provide information on the context of the study; using participants with a similar percentage of body burned would increase homogeneity of participants and reduce the number of confounding variables that may impact results.

The following study demonstrated that when a coach was present, distress levels decreased for eight burn patients. Further studies are required to assess whether distress levels can be decreased between coaching sessions. Increasing sample size and age ranges would increase generalizability.

Cancer

The following eight articles are assessing life coaching as an intervention to manage different forms of cancer and manage side-effects associated with cancer. Participants ranged from children to adults. Eight studies met the inclusion criteria for this section.

Brown, R., Butow, P. N., Boyer, M. J., & Tattersall, M. H. N. (1999). Promoting patient participation in the cancer consultation: evaluation of a prompt sheet and coaching in question-asking. British Journal of Cancer, 80(1/2), 242-248.

Purpose: To compare the effects of standard practice consulting, a question prompt sheet, and face-to-face coaching on promoting patient question-asking behaviour.

Operational Definition of Coaching: The coaching consisted of: generating questions; examining benefits and barriers to asking questions; and rehearsing questions. A research psychologist provided the coaching. No operational definition of coaching was provided.

Sample: 60 patients with heterogeneous cancers who saw two oncologists for the first time.

Design/Methodology: Patients were randomly allocated to one of three groups of equal size. Group one patients received a standard practice consultation. Group two patients received a question prompt sheet that had a structured list of 17 questions patients commonly asked their oncologist. Group three patients received a question prompt sheet plus interactive coaching immediately before the consultation. Questionnaires that assessed patient satisfaction, anxiety, and psychological adjustment were mailed to participants two weeks after the consultation.

Findings: There was no significant difference between groups regarding the number of questions asked during their oncologist visit. There was a higher tendency for the interventions groups to ask more questions.

Limitations: Patients were not screened about their question-asking behaviours in the past. Some patients may have already been vocal in asking questions during physician visits skewing results.

Strengths: One psychologist delivered consistent coaching. Consultations were audio-recorded which increases credibility.

Recommendations: Patients should be asked about their question-asking behaviours to ensure accurate representation of results.

Dahlquist, L. M., Gil, K. M., Armstrong, F. D., Ginsberg, A., & Jones, B. (1985). Behavioral management of children's distress during chemotherapy. Journal of Behavior Therapy and Experimental Psychiatry, 16(4), 325-329.

Purpose: To examine the effects of coaching through cognitive behavioural strategies on child, parent, and medical personnel ratings of distress during chemotherapy venopunctures.

Operational Definition of Coaching: Coaching was described as a cognitive behavioural strategy (Elliott & Olson, 1983; Nocella & Kaplan, 1982; Siegel & Paterson, 1980). It consisted of teaching muscle relaxation, controlled breathing, pleasant imagery, and positive self-talk. A clinical psychologist and three advanced clinical psychology graduate students delivered the coaching.

Sample: 3 children between 11 and 13 years of age receiving inpatient chemotherapy.

Design/Methodology: All participants received chemotherapy at 1- to 4- week intervals. A clinical psychologist and three advanced clinical psychology graduate students conducted the intervention. The intervention took place in the room where participants received the venopuncture. Participants were taught relaxation and breathing techniques to cope with distress and were told to practice these techniques before the next chemotherapy administration. During the next three chemotherapy sessions, the psychologist reviewed the coping techniques taught earlier and also coached the child during the venopunctures.

Findings: Child self-report and medical personnel ratings of distress decreased from baseline during the venopunctures (46% to 68%). Parental ratings of children's distress did not change from baseline.

Limitations: One child did not complete the intervention because his condition worsened and chemotherapy was terminated. There was no control group in this study to compare results. There were no controls that kept medication timing, chemotherapy, and coaching consistent for all participants.

Strengths: A detailed screening procedure was used when obtaining participants. Information was provided about patients who did not complete the study. This information informs readers that it was not the intervention that may have contributed to attrition.

Recommendations: It is recommended that participants receive the same amount of coaching at the same time during their chemotherapy administration to make the study protocol as consistent as possible.

Dodd, M. J. & Miaskowski, C. (2000). The PRO-SELF program: A self-care intervention program for patients receiving cancer treatment. Seminars in Oncology Nursing, 16(4), 300-308.

Purpose: To compare the effectiveness of the PRO-SELF program and usual care in enhancing the self-care abilities to prevent four major side effects of chemotherapy: nausea; vomiting; mucositis; and infection.

Operational Definition of Coaching: An intervention nurse provided the coaching. No formal training was discussed. Coaching consisted of: instructing patients how to use the PRO-SELF program; providing support and encouragement to expand self-care abilities; and positively reinforcing behaviour change. No other coaching details were provided.

Sample: One hundred and twenty-seven oncology patients who were receiving a select group of chemotherapy drugs.

Design/Methodology: Patients were randomly assigned to either the experimental group or the usual care group. Patients in the experimental group participated in the PRO-SELF program which consisted of: written information on managing the four side effects; self-care exercises and equipment to manage side effects; and assistive support. Assistive support consisted of: nurses coaching patients on how to use the PRO-SELF program; audiotaping the coaching interactions so that patients could play it back at home; providing a relaxation and imagery audiotape for patients to use at home; and providing a follow-up telephone call 24 hours after treatment to assess how patients were doing.

Findings: No statistically significant differences between the experimental and control groups in reducing the severity of the four side effects. Researchers reported that many experimental group patients found the PRO-SELF program helpful in managing chemotherapy side effects.

Limitations: It was not clear whether coaching or another component of the PRO-SELF contributed to the non-significant results. No operational coaching definition was provided. Some experimental patients may have received more coaching than others because patients were allowed to telephone and talk to the intervention nurse. This may have confounded results.

Strengths: One intervention nurse tried to provide consistent coaching during the intervention. Qualitative data was used to examine patients' perceptions about the coaching experience. A qualitative component provides greater information that may not have been collected with quantitative measures only.

Recommendations: It is recommended that a coaching protocol be established to ensure all experimental participants receive the same amount of coaching. It would be useful to develop a study design to assess the effectiveness of the individual components of PRO-SELF to determine which component is most effective at reducing side-effects.

Miakowski, C., Dodd, M., West, C., Schumacher, K., Paul, S. M., Tripathy, D., & Koo, P. (2004). Randomized clinical trial of the effectiveness of a self-care intervention to improve cancer pain management. Journal of Clinical Oncology, 22(9), 1713-1720.

Purpose: To compare the effects of the PRO-SELF Pain Control Program and standard care in decreasing pain intensity scores, increasing appropriate analgesic prescriptions, and increasing analgesic intake.

Operational Definition of Coaching: A specially trained oncology nurse provided the coaching. The nurse coached patients in the following areas: improving pain relief by altering the times and frequency of analgesic intake; how to assess pain and the need for analgesics; strategies to prevent side-effects; and how to speak to their health care provider about the need for a change in their analgesic prescription. A reference was not provided regarding the coaching method.

Sample: One hundred and seventy-four adult oncology outpatients with pain from bone metastasis.

Design/Methodology: Patients were randomly assigned to the PRO-SELF Pain Control Program intervention or the standard care group. Patients in the standard care group received information on cancer pain management. The home visits and telephone calls monitored patients' adherence to a pain management diary. A specially trained intervention nurse saw patients in the PRO-SELF Pain Control Program group. During the first session, patients received detailed information on cancer pain management, were taught to use a weekly pillbox, and were given instructions how to communicate with their physician about pain and the need for a change in their analgesic prescription. During home visits and telephone calls, nurses reinforced previous teachings and coached patients about how to change their pain management plans.

Findings: Pain intensity scores decreased significantly ($p < 0.0001$) from baseline in the PRO-SELF Pain Control Program group. The percentage of patients in the PRO-SELF Pain Control Program group with the most appropriate type of analgesic prescription increased significantly ($p = 0.008$) compared to an insignificant increase in the standard care group.

Limitations: It is not clear whether the coaching component was the same for all patients which reduces replicability and a clear understanding of what actually contributed to the reported findings.

Strengths: There were no significant differences between the two groups at baseline which helps confirm the likelihood the intervention was associated with the reported changes.

Recommendations: All participants should receive consistent coaching in order to examine the true effect of coaching.

Samarel, N., Fawcett, J., & Tulman. (1997). Effect of support groups with coaching on adaptation to early state breast cancer. Research in Nursing & Health, 20, 15-26.

Purpose: To compare the effects of cancer support groups (CSGs) with coaching, cancer support groups without coaching, and no cancer support group on adaptation post surgery.

Operational Definition of Coaching: No formal definition was provided. A reference for the leaders' roles was provided (Nichols, 1988). Coaches were significant others of participants

Sample: The subjects included 181 women who had surgery for Stage I or Stage II breast cancer within four months of the study's beginning. The participants were between the ages of 28 and 86.

Design/methodology: Women were randomly assigned to one of three groups. The CSGs were held one evening a week for one hour for eight weeks. "Expert clinicians" led the CSGs – a nurse and a social worker. There were three facilitating teams and each team consistently ran the same CSG as previous weeks. The clinician teams' training consisted of a four-hour training session along with a manual for them to follow. Four instruments were administered at the beginning of the first CSG meeting, at the end of the eight-week intervention, and eight weeks after the final CSG meeting.

Findings: The coaching group noticed a higher quality relationship with their significant other ($p = 0.016$). However, these results did not sustain eight weeks later. Cancer support groups had no effect on symptom distress, emotional distress, or functional status.

Limitations: There is no information on whether the significant other coaches were trained in any way. There was no tool used to measure whether coaching took place between CSGs. If some participants received coaching between CSGs, this may have impacted results in a more favourable manner.. As noted in the article, baseline measures indicated that many of the participants had already recovered substantially from surgery and may have contributed to the "differential group effects". Because many significant others are also affected by his/her partner being diagnosed with breast cancer, they may have not been the best choice as coach and may have contributed to the decrease in quality relationship eight weeks later.

Strengths: Detailed recruitment data, objectives of the CSGs, and attrition information was provided which aids future researchers looking to conduct similar research. The researchers did try to maintain consistency by using the same two facilitators for each group.

Recommendations: It is recommended that participant and coach be interviewed to gather further information on how to improve the coaching experience in order to sustain the reported effects for longer; providing a clear operational definition of the coaching intervention would help establish context and information for future studies; future researchers may be interested in using non-family members as coaches to see whether that variable would impact distress levels.

Schumacher, K. L., Koresawa, S., West, C., Hawkins, C., Johnson, C., Wais, E., Dodd, M., Paul, S. M., Tripathy, D., Koo, P., & Miaskowski, C. (2002). Putting cancer pain management regimens into practice at home. Journal of Pain and Symptom Management, 23(5), 369-382.

Purpose: To examine the difficulties patients and family caregivers had with bringing up pain management issues to a nurse's attention during a teaching and coaching intervention.

Operational Definition of Coaching: A specially trained oncology nurse provided the coaching. The nurse coached patients in the following areas: improving pain relief by altering the times and frequency of analgesic intake; how to assess pain and the need for analgesics; strategies to prevent side-effects; and how to speak to their health care provider about the need for a change in their analgesic prescription. No other coaching details were provided.

Sample: Fifty-two patients and 33 family caregivers who were participating in a randomized clinical trial of a nursing intervention called the PRO-SELF Pain Control Program.

Design/Methodology: A qualitative analysis examined the effectiveness of the PRO-SELF Pain Control Program – a psycho-educational intervention that included individual education, coaching, and support. Patients were randomly assigned to the PRO-SELF Pain Control Program intervention or the standard care group. A content analysis examined: audio-taped verbatim transcripts of nurse, patient, and family caregiver interactions during the home visit; the nurse's field notes; and verbatim transcripts of telephone calls.

Findings: Patients had difficulty in seven areas while participating in the PRO-SELF Pain Control Program. These areas included: obtaining prescribed medication; accessing information; understanding information; managing side effects; managing new or unusual pain; managing multiple symptoms at the same time; and tailoring regimens to meet individual needs.

Limitations: Patients were not screened for whether they participated in other pain control programs which may have impacted results. It was not clear whether all participants received the same amount of coaching which may also have skewed results.

Strengths: A thorough content analysis of multiple sources was conducted.

Recommendations: Future researchers may be interested in assessing whether there is an outcome difference between the different components of the intervention (e.g. coaching vs. teaching). It is recommended that the program be limited to individuals who have not previously participated in a pain control program.

Wilkie, D. J., Williams, A. R., Grevstad, P. Mekwa, J. (1995). Coaching persons with lung cancer to report sensory pain: Literature review and pilot study findings. Cancer Nursing, 18(1), 7-15.

Purpose: To compare the effects of coaching and no coaching on reducing the discrepancy between patients' self-reports and nurses' reports of sensory pain.

Operational Definition of Coaching: Coaching was defined as a method for patients to become more educated and active in their own pain management. The coaching was an interactive process that assumed patients are active processors of information; can elicit beliefs and attitudes to serve as impetuses for behaviour change; can learn more adoptive ways of thinking, feeling, and behaving; and be active individuals in their own behaviour change (Johnson, 1980; Turk and Fernandez, 1990).

Sample: Eighteen out patients with lung cancer pain.

Design/Methodology: Patients were randomly assigned to a coached or not-coached (usual care) group. Nurses completed questionnaires about patient communicated pain during the intervention assessment interview. After the assessment interview, patients completed questionnaires about their pain. Patients in the coached group were instructed how to self-monitor pain, qualify the pattern and intensity of their pain, and how to best report the pain to a clinician. This information was reinforced one week later during a telephone call. Post-test measures were completed four weeks after the assessment interview.

Findings: Improved percent agreement occurred consistently more often between pre- and post-tests of self-report measures of sensory pain and nurses' pain assessments in the coached group than the non-coached group. For example, reported agreement in the coached group regarding pain sites and pain quality was 100% and 75% post-intervention compared to 50% and 25% in the control group.

Limitations: High study mortality contributed to a small sample size. Data collection was not the same for all participants which reduces replicability and confounds results.

Strengths: Detailed screening procedures were used to enrol participants ensuring that the required demographic was enrolled. Attrition information was provided. A reference was provided regarding the type of coaching used.

Recommendations: It is recommended that the same protocol of data collection be used for all participants. Future researchers may be interested in qualitatively assessing patients' perspectives regarding their coaching experiences.

Wright Oliver, J., Kravitz, R., Kaplan, S. H., & Meyers, F. J. (2001). *Individualized patient education and coaching to improve pain control among cancer outpatients. Journal of Clinical Oncology, 19(8), 2206-2212.*

Purpose: To compare the effects of an individualized education and coaching program and standard care on pain outcomes and pain related knowledge among outpatients with cancer related pain.

Operational Definition of Coaching: A masters level psychology student and a fourth year medical student provided the coaching. Coaching involved having the patient identify treatment goals, helping the patient formulate questions to ask the physician to achieve identified goals, and discussing techniques of how to speak with physicians about pain and how to negotiate a satisfactory pain treatment plan. A formal coaching model was not provided.

Sample: Seventy-seven English speaking cancer patients between the ages of 18 and 75 with moderate pain over the last two weeks.

Design/Methodology: Patients were randomly assigned to the experimental group or the control group. Experimental patients received a 20 minute individualized education and coaching session to increase knowledge of pain self-management, to address personal misconceptions about pain treatment, and to rehearse scripted patient-physician dialogue about pain control. Patients in the control group received standardized instructions on controlling pain. Data on average pain, functional impairment as a result of pain, pain frequency, and pain related knowledge was collected at enrolment and two weeks following the intervention.

Findings: At follow up, average pain severity decreased significantly more ($p = 0.014$) among experimental group patients than control group patients. The intervention had no statistically significant impact on functional impairment as a result of pain, pain frequency, and pain related knowledge.

Limitations: Because the purpose of this study was to assess an education and coaching program versus standard care, it is unclear for the purpose of this paper whether the coaching or the education component was associated with the reported improvements.

Strengths: There were no baseline differences between the groups. Each educational and coaching session was standardized for all groups.

Recommendations: It is recommended to future researchers to assess the effectiveness of the educational component and coaching component separately. Also, it would be interesting to gain qualitative information on the patients' reactions to the coaching experience.

The eight studies presented in this section had varying results. While some studies reported a statistically significant change in their patients' management of cancers, other studies reported no change. Those studies that did find a change reverted to pre-treatment scores after a given period of time. Also, when the coach was no longer present, participants returned to pre-treatment distress levels. Given these varying results, it is suggested that researchers include a qualitative component to assess what participants liked and did not like about their coaching experience. Such data would help future researchers tailor programs that may result in statistically significant changes in individuals with cancer. The relationship between life coaching and cancer is still requiring further exploration to assess if coaching can impact the management of cancer.

Cardiovascular Health

A collection of eight articles were found that employed life coaching as a treatment for patients diagnosed with heart failure or used as a treatment following cardiac surgery. The following articles assessed whether life coaching on its own or coupled with another program could help patients with cardiac failure or coronary artery disease manage their condition by lowering their total cholesterol levels.

Also, some studies assessed whether life coaching aided in the recovery or rehabilitation of patients following cardiac surgery.

Bos, A., Remmen, J. J., Aengevaeren, W. R. M., Verheugt, F. W. A., Hoefnagels, W. H. L., & Jansen, R. W. M. M. (2002). Recruitment and coaching of healthy elderly subjects for invasive cardiovascular research with right-sided catheterisation. The European Journal of Cardiovascular Nursing, 1(4), 289-298.

Purpose: To examine factors important for recruitment and participation of healthy elderly adults for invasive cardiovascular research with right-sided catheterization.

Operational Definition of Coaching: A research nurse with extensive experience in geriatric nursing provided the coaching. Coaching consisted of providing the participants with extensive information about the procedure. A reference was not provided regarding the coaching method.

Sample: Thirty-eight healthy elderly adults over the age of 65 who passed a cardiovascular screening.

Design/Methodology: All participants were screened for cognitive disorders and underwent an intensive screening program. A research nurse provided information and individual support during the initial visit, the screening procedure, and the catheterisation. The nurse made a follow-up phone call in the evening or one day following the procedure to check up on the participant. Participants could also telephone and ask the research nurse questions regarding the study and cardiovascular health. The research nurse repeated extensive information to participants throughout the study and was available to handle phone calls.

Findings: Recruitment into an invasive cardiovascular research study with right-sided catheterization is possible. Pre- and post-test questionnaires showed that coaching contributed to a satisfactory experience during the study.

Limitations: There was no set protocol for coaching and the research nurse did not receive any training which limits replicability and a clear understanding of what actually took place. Each participant received individualistic and different coaching which could be seen as a confounding variable that may have impacted results. Also, this study did not have a control group for results to be compared against.

Strengths: This study had detailed screening procedures to select participants in order to ensure that participants fit the requirements of the study protocol.

Recommendations: A clear and detailed coaching protocol should be included to aid future researchers wanting to conduct similar research. Coaching against a non-coaching control group should be examined to assess differences between those who were coached and participants who were not.

Gortner, S. R., Gilliss, C. L., Shinn, J. A., Sparacino, P. A., Rankin, S., Leavitt, M., Price, M., & Hudes, M. (1988). Improving recovery following cardiac surgery: a randomized clinical trial. Journal of Advanced Nursing, 13, 649-661.

Purpose: To compare the effects of in hospital teaching and in hospital teaching plus counselling and telephone monitoring on post hospital recovery and rehabilitation at home.

Operational Definition of Coaching: Coaching was a very small component of the telephone monitoring intervention. Masters and doctoral level nurses provided coaching. No set coaching protocol or training was discussed. No operational definition of coaching was provided.

Sample: Sixty-seven prospective bypass and valve surgery patients between the ages of 30 and 77 and their spouses.

Design/Methodology: Patients were randomized to one of two different interventions. Patients in the hospital teaching arm of the study viewed a slide/tape show about diet, physical activity, quitting smoking, and cardiac health. They also received an information booklet on cardiac health. Patients in the hospital teaching plus counselling and telephone monitoring arm of the study viewed the same hospital teaching slide/tape show and an additional slide/tape show on family coping and conflict resolution. These patients then received counselling sessions and had their progress monitored by nurses over the

telephone. Counselling was held immediately after the slide/tape show and provided families with anticipatory guidance on recovery at home and support for emotional responses in the immediate post-discharge period. Nurses who provided telephone monitoring taught and coached on a variety of emotional and physical issues. Nurses also reviewed the progress made over the past week and assisted with problem solving. Patients were called for four weeks and then bi-weekly for the next four weeks. All patients in the study were contacted by telephone at three and six months for data collection.

Findings: At three months post surgery, patients in the hospital teaching plus counselling and telephone monitoring group had significantly greater ($p = 0.034$) self-efficacy for lifting objects and tolerating emotional distress. No other significant differences between the two groups were detected at three and six months.

Limitations: Telephone calls to patients were not consistent which may have impacted results. Not every patient in the counselling arm received coaching. There were no time parameters established for each call which may have impacted results if some participants received longer than normal coaching calls.

Strengths: There were no significant differences between participants at baseline which allows for a stronger association between the treatment and the reported outcome. This study used randomization to allocate patients into different groups in order to assure that the treatment groups were similar which increased the chances that the only difference between groups was if they received or did not receive the intervention.

Recommendations: It is recommended that a clear coaching protocol be established for readers to clearly understand what took place. It may be of interest to future researchers to assess coaching separately from other components of the intervention and to gather qualitative data to assess participants' perceptions of coaching.

Gortner, S. R. & Jenkins, L. S. (1990). Self-efficacy and activity level following cardiac surgery. Journal of Advanced Nursing, 15, 1132-1138.

Purpose: To compare the effects of in-patient education and in-patient education plus telephone monitoring, which included coaching, on cardiac efficacy and reported activity.

Operational Definition of Coaching: Coaching was a very small component of the telephone monitoring intervention. A project nurse provided the coaching. No operational definition of coaching was provided.

Sample: One hundred and forty-nine recovering cardiac surgery patients between 30 and 75 years of age.

Design/Methodology: Patients were randomized to one of two interventions. Both control and experimental patients were interviewed before surgery to obtain self-reports of physical activity and efficacy assessments for walking, climbing, lifting, and general activities. Patients in both groups received a booklet and viewed a slide/tape show on recovering after cardiac surgery. Experimental patients viewed an additional slide/tape show on family coping and conflict resolution and attended a brief counselling session with a project nurse. During the counselling session, family coping skills were discussed and reviewed. The participants in the experimental group were telephoned every week for the first 4 weeks following the surgery. During these calls, nurses: monitored recovery; instructed how to reduce risk-factors; coached toward physical activity; and provided reassurances to the patients and their spouses. The participants in the experimental group were called once every two weeks between weeks 4 and 8. All participants were telephoned and asked to provide efficacy assessment measures and physical activity self-reports at 4, 8, 12, and 24 weeks.

Findings: Experimental patients reported significantly higher levels of self-efficacy expectations for walking between weeks four and eight ($p = 0.02$) and between weeks 8 and 24 ($p = 0.05$). Experimental patients reported higher levels of general activity at weeks four ($p = 0.05$) and eight ($p = 0.02$).

Limitations: Not all experimental patients viewed the additional slide/tape show. Telephone monitoring was not consistent for each experimental participant. Both of these limitations are confounding variables that may have impacted results. Patients were not screened whether they had participated in any other

formal cardiac rehabilitation program prior to their surgery which may have skewed results if some patients had skills learned from a different program. No formal definition of coaching was provided. It was not clear whether effects were a result of coaching or another component of the study.

Strengths: Detailed recruitment information was used to obtain participants. There was no significant difference between groups at baseline. Study instruments were reliable.

Recommendations: A clear coaching protocol would help replicability. An intervention that is consistent among groups would help determine whether the intervention was associated with the reported results. It is recommended that coaching be examined separately from other components of the intervention to test its effect.

Kris-Etherton, P.M., Shaffer Taylor, D., Smiciklas-Wright, H., Michell, D.C., Bekhuis, T.C., Olson, B.H., & Slonim, A.B. (April 2002). High-soluble-fibre foods in conjunction with a telephone-based, personalized behavior change support service result in favourable changes in lipids and lifestyles after 7 weeks. Journal of The American Dietetic Association, 102(4), 503-510.

Purpose: To determine whether providing high fibre foods and a personal support coach to patients with moderate hypercholesterolemia will improve serum lipids and elicit cholesterol managing lifestyle changes.

Operational Definition of Coaching: Participants were coached every 7-10 days totalling six sessions, which lasted for approximately 15 minutes each. Coaches received two weeks worth of training and were used to empower participants to understand and overcome barriers (Brownell & Cohen, 1995).

Sample: Each treatment group had 74 men and women with LDL cholesterol levels ≥ 3.37 mmol/L, but less than the 90th percentile for age and gender.

Design/Methodology: A stratified randomization scheme was employed to ensure both treatment and control group were similar. The intervention group received weekly frozen foods rich in high-soluble-fibre, a personal coach once a week and weekly mailings from the coach. The control group received information regarding healthy food choices and physical activity guidelines. Each coaching session was audiotaped and analyzed by trainers, the project manager, and an on-site manager for quality assurance. After each participant signed consent, he/she continued to eat normally for two weeks. During that two-week period, three 24-hour dietary recalls were performed to collect baseline data. For a two-week period during weeks five and seven, three additional dietary recalls were administered. Participants were scheduled for a baseline, week three and week seven clinic visits where serum lipids and lipoproteins, glucose, insulin, blood pressure, and weight were measured.

Findings: Decreases in total cholesterol, low-density lipoprotein cholesterol and triglycerides was lower than the control group ($p < 0.0167$). The intervention group reported increased knowledge, ability, and confidence to make diet and exercise changes compared to the control group ($p < 0.05$).

Limitations: It is difficult to determine whether it was the personal coaching or the food provided to the intervention group that contributed to the results. The study does not mention whether the treatment and control group participants were in contact during the blood tests. Participants may have exchanged information, which may have initiated resentful demoralization by those in the control group impacting internal validity (Cook and Campbell, 1979). Two participants did not return for clinic visits and it was not described why. This information could help improve the program, or show that the food and coaching had a negative effect. Demographic information was not provided limiting generalizability. It was not clear whether the trainers, the project manager, and the on-site manager analyzed the tapes separately or as a group. Analyzing as a group may have influenced individual group members.

Strengths: Thorough description of methods and statistical analyses. A stratified randomization scheme was used which enables matched characteristics between groups. Clear baseline data were collected to clearly indicate a difference when the intervention was administered. Quality assurance was employed by reviewing the coaching tapes.

Recommendations: Providing information on whether participants were in contact would eliminate a threat to internal validity; including reasons for attrition would help future researchers tailor programs to help retain participants; including demographic information would inform readers who would benefit from the reported results; it is recommended that researchers analyze coaching session separately and then unite as a group to discuss findings. It is recommended to future researchers to add two additional arms to the study where one group receives coaching only, and the other groups receives prepared foods only to determine coaching's true effect.

Lisspers, J., Hofman-Bang, C., Nordlander, R., Rydèn, L., Sundin, O., Ohman, A. & Nygren, A. (1999). Multifactorial evaluation of a program for lifestyle behavior change in rehabilitation and secondary prevention of coronary artery disease. Scandinavian Cardiovascular Journal, 33, 9-16.

Purpose: To examine the effects of a multi-component lifestyle behaviour change program on the rehabilitation and secondary prevention of coronary artery disease.

Operational Definition of Coaching: A specifically trained nurse provided personal coaching.. The coaching consisted of providing motivation for behaviour change, setting goals, reinforcing self-observations and self-reporting of lifestyle behaviour changes, providing feedback on behaviour change, and offering problem solving techniques. No information was given about how the coaching was delivered during the 11-month follow-up.

Sample: Two hundred and ninety-two participants with a recent history of acute myocardial infarction, coronary bypass surgery, or percutaneous transluminal coronary angioplasty.

Design/Methodology: The program started with a four-week residential stay at the intervention unit. The main focus of the program was to promote health education and behaviour change in major lifestyle areas. Behaviour change activities consisted of theoretical lectures, discussions, and practical skills training. Group and individual intervention formats were also used and focused on stress management, diet, exercise, and smoking cessation. Each participant was also assigned a personal coach. The coach maintained contact with each participant for 11 months following the initial residential stay.

Findings: Quality of life improved for the participants. There were significant improvements in blood lipid ($p = 0.0001$), exercise capacity ($p = 0.0001$), and body mass index ($p = 0.0001$). Significant improvements also occurred in type A behaviour management ($p = 0.01$ to 0.0001), anger hostility ($p = 0.05$ to 0.0001), stress reactions ($p = 0.0001$), diet ($p = 0.0001$), exercise ($p = 0.0001$), and smoking cessation ($p = 0.05$).

Limitations: This study had no control group for results to be compared against. It was not clear how participants were contacted during the 11-month follow up which reduces replicability. Although it was not the purpose of the study, it is not clear for the purposes of the current document whether improvements were a result of the coaching or another component of the program.

Strengths: Very few participants dropped out of the study maintaining power.

Recommendations: It is recommended that future studies include a control group to compare coaching results to and a structured and detailed coaching protocol for future researchers interested in conducting similar research.

Sethares, K.A. (2003). Supporting the self-care behaviors of women with heart failure through an individualized nursing intervention (Doctoral dissertation, Boston College, 2003). Dissertation Abstracts Online, 363.

Purpose: To assess the effectiveness of a nurse coaching intervention on health beliefs and self-care behaviours in women with heart failure.

Operational Definition of Coaching: The coaching was conducted by an advance practice nurse and followed the Individualized Nursing Care Model of Self-care for Women with heart failure (HF)

(Artinian, Magnan, Sloan, & Lange, 2002). The coaching was used to educate and support women with HF. Participants were coached for a total of four hours over a four-week period.

Sample: Seven women with HF participated in this study. They all spoke English and were over the age of 65.

Design/Methodology: A non-concurrent multiple baseline single-subject design was employed for this study. After consent was obtained, the researchers collected baseline measurements and belief data. The medications used by each participant were documented in order to customize an education plan of only those medications used by that participant. A 24-hour dietary recall was collected and analyzed to produce a custom sodium teaching program used during the second visit. Phone calls were placed to participants four times during the first week and five times during the second week to collect information on perceived benefit, perceived barriers and self-efficacy beliefs. Reminders to document weight, medication, and dietary intake also took place during these calls. After the four-week study was complete, a one-month follow-up call was made. The nurse coach visited each participant once per week for one hour. Each session was educational in nature combined with support for adhering to the study. Final data was collected at the end of the fourth visit with each participant. Each session was audiotaped. Several instruments were used in this study and are explained in full detail.

Findings: A significant increase ($p < 0.05$) in health beliefs for all participants but one. No significant changes were observed in self-care behaviours.

Limitations: The following limitations were outlined in the study. Testing effect may have taken place throughout the study decreasing internal validity Cook & Campbell (1979). One researcher half way through the study started collecting data potentially contributing to experimental bias. A homogeneous sample was used which decreases generalizability and external validity.

Strengths: A reference was provided for the coaching used which increase replicability. A model was used and described in detail which strengthens the integrity of the study. The nursing perspective was included thereby allowing readers to understand where the researcher was coming from and the results can be interpreted accordingly (Greenhalgh & Taylor, 1997). The reason for using women only was explained. A form of member-checking was used with participants to ensure the results were credible (Greenhalgh & Taylor).

Recommendations: It is recommended that future studies remove researchers invested in the study from collecting data to increase internal validity; including a more heterogeneous sample would increase generalizability.

Vale, M. J., Jelinek, M. V., Best, J. D., & Santamaria, J. D. (2002). Coaching patients with coronary heart disease to achieve the target cholesterol: A method to bridge the gap between evidence-based medicine and the "real-world" - randomized controlled trial. Journal of Clinical Epidemiology, 55(3), 245-252.

Purpose: To compare the effects of coaching and standard medical care on achieving a target cholesterol level.

Operational Definition of Coaching: A dietician, who was experienced in working with patients with cardiovascular disease, provided coaching over the telephone. The coach used "the coach model" which included a continuous five stage coaching cycle. This consisted of: 1) asking questions to establish patient knowledge, attitude, and beliefs about risk factors; 2) providing explanations and rationale for any advice given; 3) assertiveness training; 4) goal setting; and 5) reassessment at the next coaching session. The model was explained well but a reference for further information was not provided.

Sample: Two hundred and forty-five patients with established coronary heart disease (CHD) who underwent either coronary artery bypass graft surgery or a percutaneous coronary intervention.

Design/Methodology: Patients with CHD underwent a stratified randomization by cardiac procedure (coronary artery bypass graft surgery or a percutaneous coronary intervention) to receive either coaching

or usual medical care. Coached patients were contacted by phone at two weeks post randomization for the first coaching session. These patients were coached three more times at six-week intervals and contacted once more at six months to obtain a blood sample for serum lipid analysis. Usual care patients were contacted at two weeks post randomization and at six months to obtain a blood sample for serum lipid analysis.

Findings: Coached patients had significantly lower total cholesterol levels at six months ($p < 0.001$). There were no significant differences in the amount of prescribed lipid lowering drug therapy between the two groups.

Limitations: There was no set time frame for each coaching session as the lengths of calls varied in order to create a plan of action for each participant. Both groups were informed about the cardiac rehabilitation program that was being offered to the experimental group which may have caused resentful demoralization by the usual care group reducing internal validity (Cook & Campbell, 1979). It is unclear how many participants joined this program and if this skewed the results.

Strengths: One coach provided consistent information to each participant in the coaching arm of the study. A clear and established protocol was used for the coaching participants. There were no significant differences between the two groups at baseline which increases the chances that the observed effects of the treatment group were a result of the intervention.

Recommendations: It is recommended that each coaching session be the same length of time to accurately document the amount of time required to produce the reported results. Coaching should be examined without informing participants about a cardiac rehabilitation program to reduce a threat to internal validity.

Vale, M., Jelinek, M., Grigg, L., & Newman, R. (2003). Coaching patients on achieving cardiovascular health (COACH). Archives of Internal Medicine, 163, 2775-2783.

Purpose: To determine whether patients with coronary heart disease (CHD) could be coached by nurses and dieticians in conjunction with their physicians to obtain target levels for their total cholesterol (TC) and other risk factors.

Operational Definition of Coaching: The coaches for this program were hospital based and used telephone calls and mailings to coach patients. The coaches were trained in the COACH model (Vale, Jelinek, Best, & Santamaria, 2002). The six coaches (two dieticians and four nurses) underwent two weeks of part-time coaching training.

Sample: The COACH program had 398 participants (313 males, and 85 females), and 394 for the usual care group (297 males, 97 females). The mean age range was 58.6 for the COACH program and 58.3 for the usual care group.

Design/Methodology: This study was a randomized, multiple risk factor clinical intervention. CHD patients were contacted at bedside in one of six hospitals by a coach in Melbourne, Australia. Participants were randomly assigned to a matched treatment and control group. Participants were contacted two weeks after randomization by a coach by telephone. Three more telephone sessions in six-week intervals were conducted. COACH program software was also used in conjunction with the telephone calls. After six months, participants returned for an assessment of risk factors.

Findings: The COACH treatment group attained a greater mean reduction in total cholesterol compared to the control group ($p < 0.0001$). The COACH treatment group also had a greater reduction in body weight ($p < 0.001$), BMI ($p = 0.001$), dietary intake of total fat ($p = 0.04$), saturated fat ($p = 0.002$), cholesterol ($p = 0.04$), and anxiety ($p = 0.03$).

Limitations: Further information on those that left the study might help to strengthen future studies.

Strengths: The researchers provided detailed information on the participants, the methods used to recruit participants, the training involved for the coaches, the statistical analysis used, comparisons between groups, and references for the type of coaching used.

Recommendations: To reduce self report bias, it is recommended that the researcher or research assistant measure the secondary end point; obtaining information on those participants that dropped-out would provide information for future researchers to tailor a program that could reduce attrition.

All of the articles included in this section reported statistically significant results. Half of the above studies reported a decrease in total cholesterol levels. Increased self-efficacy in performing tasks pre- and post-surgery and increased health beliefs was reported for the remaining studies. Given the findings from these articles, we can conclude that there is a strong relationship between life coaching and cardiovascular health.

Compromised Urinary Bladder Syndrome

One article was found that assessed the effectiveness of life coaching in the management of compromised urinary bladder syndrome (CUBS). As described by the following authors, CUBS is associated with “urinary frequency and/or urinary incontinence sufficient to be a problem.”

Dowd, T., Kolcaba, K., & Steiner, R. (March 2003). The addition of coaching to cognitive strategies: interventions for persons with compromised urinary bladder syndrome. Journal of Wound, Ostomy and Continence Nursing, 30(2), 90-99.

Purpose: To determine the difference between patients with compromised urinary bladder syndrome (CUBS) in comfort, bladder function, incidents of urinary frequency (UF) and/or urinary incontinence (UI), and perception of health depending on which group he/she was assigned: 1) receiving information; 2) receiving information and cognitive strategies; 3) receiving information, cognitive strategies, and coaching.

Operational Definition of Coaching: Coaching was provided on a weekly basis over the phone as well as during data collection points (T1= one week after consent received, T2= four weeks after consent received, T3=12 weeks after the start of the study). Coaching was used to provide support to patients (Wilkie, Williams, Grevstad, & Mekwa, 1995).

Sample: Thirty-five men and women with CUBS for at least six months, with a Mini Mental State Screen score of greater than 20, and had a negative urine screen with Ames Multistix 10 SG Reagent Strips for Urinalysis participated in this study.

Design/Methodology: After consent was obtained, participants filled out a demographic and bladder health questionnaire, the Urinary Frequency and Incontinence Questionnaire, the Bladder Function Questionnaire, and the Short Form Health survey. Participants were also asked to record UI and UF episodes. Participants were randomly assigned to one of three groups. All participants after completing the questionnaires were given an informational pamphlet on bladder health. Those in the information and cognitive strategies group also received a tape recorder and audiotape with cognitive strategies. They were instructed to listen to the tape every day for four weeks and once a week until the end of the study at 12 weeks. The coaching group also received weekly coaching calls for twelve weeks. One week after the start of the study, participants were contacted and the informational pamphlet was reviewed and the cognitive strategies group went over using the tape recorder. Questionnaires were completed again at four and 12 weeks.

Findings: Participants in group one and three improved on comfort and UI/UF ($p = 0.059$). All groups increased on bladder function ($p = 0.0001$). Perception of health did not change for any group.

Limitations: Selection may have compromised internal validity as outlined by Cook and Campbell (1979). Participants had different types of UI which altered findings. Although references were provided for the type of coaching used, the length of the coaching and the training received by the coaches was not

outlined. As described by the authors, participants had difficulty with the tape recorder which may have skewed results.

Strengths: Information was provided on the attrition rate and reasons for leaving. Coaching references were provided. Information on questionnaires and data analysis was thorough. Replication of this study based on the information provided could be done fairly well.

Recommendations: Including detailed information on the coaching intervention would help future researchers interested in conducting similar research; including participants with only one kind of UI would help determine the differences in intervention needed based on degree of UI; using a tape recorder that is not confusing for participants may help results; Future researchers may be interested in separating cognitive strategies and coaching to determine its individual role in aiding CUBS patients.

The following study was the first-of-its-kind and garnered statistically significant results. This study is a great start for future researchers looking to study a similar health issue. Because there is only one article to date, further research is required to explore the relationship between life coaching and CUBS.

Mental Health

Only one article looking at the effectiveness of life coaching on goal attainment, metacognition, and mental health was suitable for this section.

Grant, A.M. (2003). The impact of life coaching on goal attainment, metacognition and mental health. Social Behavior and Personality, 31(3), 253-263.

Purpose: To explore the effectiveness of life coaching on goal attainment, metacognition, and mental health. More specifically, to determine whether life coaching can help participants work through the self-regulation cycle to attain goals and develop action plans.

Operational Definition of Coaching: Participants participated in ten, 50-minute group-coaching sessions on a weekly basis. The coaching program was based on the self-help book, *Coach Yourself* (Grant & Greene, 2001). The coaching incorporated solution-focused therapy.

Sample: Twenty post-graduate students from the Faculties of Science, Economics, and Business in Australia.

Methods: This study was a within-subjects design. Participants before the start of the intervention filled out a life inventory task from the Coach Yourself program in order to examine the main areas of his/her life. Each participant was then expected to set three specific goals to be attained in a 13-week period. Participants then met in a group for ten, 50-minute weekly coaching sessions. All participants filled out an additional four questionnaire in a group setting before the coaching intervention and again after the ten sessions. The four measures were the Goal Attainment Scale, the Depression Anxiety and stress Scale, the Quality of Life Inventory, and the Self-Reflection and Insight Scale.

Findings: Goal attainment increased after the life coaching intervention ($p < 0.01$). Depression ($p < 0.01$), anxiety ($p = 0.04$) and stress ($p < 0.01$) were also notably reduced after coaching. Insight levels increased ($p = 0.02$) and reflection levels decreased ($p < 0.01$) in participants after the coaching.

Limitations: Many of the following limitations were outlined in the study. There was no control group, which would have increased the researchers' ability to conclude that the coaching intervention was the reason for the observed changes. The participants selected for this study may not have been representative of the general public limiting external validity of the study. Little information is provided on how the participants were recruited. This limits replicability. Because of the design of the study, a demand effect may have occurred. Participants may have felt obligated to report changes to please researchers. Participant demographics were missing leaving the reader unclear of who actually participated and benefited from the intervention.

Strengths: The researchers provided a reference and thorough description of the coaching used with participants. Theories were included to help support the purpose of the study. A generic model of self-regulation was presented to help clarify the model for the reader. Measures were well explained. Directions for future research were also included.

Recommendations: Using a control group would help conclude whether coaching was associated with the reported changes; providing detailed information on participants would help generalizability; using random selection would also increase generalizability.

The following researcher reported that life coaching was associated with increases in goal attainment and decreases in depression, anxiety, and stress levels. With the limited amount of research in this area, further research is needed to explore further the relationship between life coaching and mental health.

Depression

The focus of this section is to assess life coaching as a treatment option for individuals experiencing depression. Two studies met the inclusion criteria for the “depression” section.

Brook, O., van Hout, H., Nieuwenhuysse, H., & Heerdink, E. (2003). Impact of coaching by community pharmacists on drug attitude of depressive primary care patients and acceptability to patients; a randomized controlled trial. European Neuropsychopharmacology, 13, 1-9.

Purpose: The impact of pharmacist coaching towards increasing depressed patients attitudes towards nontricyclic antidepressants.

Operational Definition of Coaching: Pharmacists coached participants during three coaching sessions, which lasted 10-15 minutes. No reference was provided for the coaching used.

Sample: Nineteen pharmacists and 151 males and females taking nontricyclic antidepressants participated in this study. The mean age for the entire group was 42 years.

Design/Methodology: This was a randomized controlled study, where 19 pharmacists recruited patients with recurring depression on nontricyclic antidepressants. All patients had to complete a self-rating Drug Attitude Inventory (DAI) and the Hopkins Symptom Checklist (SCL-13) at the beginning and end of the study. Participants in the treatment group also received a 25-minute video discussing depression and its effects and three coaching sessions with a pharmacist.

Findings: Coaching had a positive effect on patient attitudes towards their antidepressant medication ($p = 0.03$).

Limitations: Neither pharmacists nor participants were blinded to the group he/she were assigned and as a result, the authors state the Hawthorne effect (Neutens & Rubinson, 2001) may have played a role in the change of attitudes towards his/her medication. As well, some participants may not have been depressed. Pharmacists and patients were financially rewarded for their participation which may have influenced results.

Strengths: The researchers provided complete information regarding study participants, design, analysis, and interpretation. The themes used by pharmacists during the coaching sessions were provided. The scales given to participants were also included in the study which could be used in future studies by other researchers. The SCL-13 did include questions regarding the video for a detailed account of participants' experience.

Recommendations: It is recommended pharmacists and participants be blinded to reduce the chance of a Hawthorne effect; providing more detail regarding the skills used during the coaching sessions would increase replicability.

Brook, O.H., van Hout, H., Stalman, W., Nieuwenhuysse, H., Bakker, B., Heerdink, E., & de Haan, M. (2005). A pharmacy-based coaching program to improve adherence to antidepressant treatment among primary care patients. Psychiatry Online, 56(4), 487-489. Retrieved August 1, 2006, from <http://ps.psychiatryonline.org>

Purpose: To determine the effectiveness of a coaching based intervention on adherence to nontricyclic antidepressant medication in patients with depression.

Operational Definition of Coaching: Pharmacists coached participants during three coaching sessions, which lasted 10-15 minutes. Themes discussed with patients were referenced (Lin, von Korff, Katon, et al., 1995). No operational definition of coaching was provided.

Sample: One hundred and thirty-five patients with depression on nontricyclic antidepressant medication in the Netherlands.

Design/Methodology: This study was a randomized controlled trial lasting six months with 19 pharmacists. Their pharmacist approached participants if they came in regularly to refill their prescription. Participants were randomly assigned to the treatment or control group. Both groups received an electronic pill container (eDEM), which recorded how many times the bottle was opened. Pharmacists also tracked patient medication files. Depressive symptoms were measured at baseline, three-months, and six-months using the self-reported 13-item depression subscale (SCL-13). The treatment group also received an information video to be watched at home on the importance of adhering to their medication.

Findings: Coaching did not have an effect on the adherence rate to nontricyclic antidepressant medication for patients suffering with depression.

Limitations: Little information was provided on what exactly occurred during the coaching sessions reducing replicability. No references were provided for further description. No information was provided about the 20% drop-out rate at three-months and the 6% increased drop-out rate at six months. Lack of information on attrition rates reduces internal validity (Cook & Campbell, 1979). As stated in the paper, the electronic pill container was given to both groups and could be argued as an intervention all on its own. Although each participant had an eDEM, the participants may not have actually taken his/her medication.

Strengths: Very little information was provided regarding demographic information of participants; however, a reference was provided to ascertain that information.

Recommendations: Providing information regarding the skills used during the coaching sessions would increase replicability; using a third control group that does not receive an eDEM or coaching may help clarify results; providing information regarding those participants that left the study before its completion could help future researchers interested in tailoring a similar program that reduces attrition.

Unfortunately the following two articles do not provide concrete information on the relationship between life coaching and antidepressant adherence. Further studies are required to explore this relationship.

Diabetes

As defined by the Canadian Diabetes Association (2007), "diabetes is a condition in which the body either cannot produce insulin or cannot effectively use insulin it produces." Nine studies met the inclusion criteria for this section.

Barrera, M Jr., Glasgow, R.E., McKay, H.G., Boles, S.M., & Feil, E.G. (October 2002). Do internet-based support interventions change perceptions of social support?: an experimental trial of approaches for supporting diabetes self-management. American Journal of Community Psychology, 30(5), 637-654.

Purpose: To determine if Internet based support interventions increase perceptions of social support in adults with type II diabetes.

Operational Definition of Coaching: An operational definition of coaching was not provided.

Sample: One-hundred and sixty male (75) and female (85) adults with type II diabetes participated in this study. Participants were between the ages of 40-75, spoke and read English, had diabetes for at least one year, and had access to a telephone. All participants could not have access to a computer at home or at work.

Design/Methodology: A stratified randomization was employed. Participants were randomly assigned to one of four treatment groups: 1) information only; 2) information and access to social support; 3) information and access to a personal coach; 4) information, social support, and access to a coach. Demographic information was collected at the beginning of the study from every participant. The Interpersonal Support Evaluation List Items and the Diabetes Support Scale were administered at baseline and at completion of the study. Following randomization, a research staff member visited participants' homes to install a personal computer in their home. All participants received information depending on his/her assignment through the Internet.

Findings: Participants in the two support conditions reported increased levels in support ($p < 0.01$). The coach plus support group did not have increased levels of support compared to the support only group.

Limitations: Although the purpose of this paper was not to assess coaching per se, it would have been beneficial to know who was doing the coaching and to view a sample e-mail sent to participants. This information would help increase replicability. As noted by the authors, there was a significantly high dropout rate at the three-month follow-up. As well, the follow-up was not very long and increased support rates may have increased for the coaching and support group beyond those of the support only group months later. It was not clear whether support chat groups were monitored to determine whether the coaching group informed the support group of his/her sessions. This may have impacted internal validity by the support only group seeking out coaching on his/her own.

Strengths: A control group was used which allows for a comparison between those who received the intervention and those that did not. Demographic information was provided and detailed information on the measures used was available. Although it is unclear why participants left the study, the researchers did analyze whether there were any differences between those who left and those who continued on, based on the demographic information obtained at the beginning of the study.

Recommendations: It is recommended that researchers provide information on the coaches and include a sample e-mail sent to participants to help increase replicability; obtaining information on why participants dropped out of the study would help future researchers tailor a program to decrease attrition; increasing the length of the study may impact results; monitoring chat sessions to ensure participants do not disclose what treatment they are in would strengthen internal validity.

Joseph, D.H., Griffin, M., Hall, R.F., & Sullivan, E.D. (2001). Peer coaching: an intervention for individuals struggling with diabetes. The Diabetes Educator, 27(5), 703-710.

Purpose: To evaluate the effectiveness of peer coaching, for individuals with diabetes, on behaviour modification.

Operational Definition of Coaching: Coaching sessions lasted for eight weeks with a one-hour face-to-face session at the beginning of the study and 10-15 minute coaching sessions over the phone for eight weeks. A reference was provided for the type of coaching used (Eliopoulos, 1997).

Sample: A sample of six participants and five coaches with type I and type II diabetes.

Design/Methodology: This study used a qualitative design that used a focus group at the end of the study. Coaches and clients had diabetes. Prior work in phase I and II of this study reviewed by a nurse educator determined who would act as coaches and who would be clients. Those chosen to be coaches attended a two-hour session where the nurse educator and social worker instructed them how to coach. At

the end of the study, coaches and clients were videotaped during a focus group to determine the effectiveness of the peer coaching.

Findings: Participants found the peer coaching to be beneficial in behaviour modification. **Limitations:** Many of the following limitations were provided by the researchers: Coaches and clients were paid throughout the study; the sample was small; however, this is common in qualitative research; the focus group at the end of the study was videotaped with both coaches and clients, which may have skewed responses; the pool of possible participants in Phase I and II was not reported; potential biases of researchers were not identified which may have impacted results; there was a significant lack of information regarding the participants in the study and the recruitment process for Phase I and II.

Strengths: The researchers included a reference for the type of coaching used. Researchers provided a theory to strengthen the reasoning for conducting the study. The reason for one pair leaving the study was explained. The questions used during the focus group were provided in the journal article which helps increase replicability. Quotes were provided which offers credibility to their findings.

Recommendations: It is recommended that researchers remove the monetary compensation to determine whether this affects results; interview clients and coaches separately to minimize potential influences; provide recruitment and participant details for future replication.

Kelly, J., Crowe, P., & Shearer, M. (2005). The Good Life Club project: Telephone coaching for chronic disease self management. Australian Family Physician, 34(1/2), 31-34.

Purpose: To examine the effects of the Good Life Club project on improving the self-management of diabetes and utilization of local health services.

Operational Definition of Coaching: Practice nurses and allied health professionals delivered coaching to participants. Coaches received two days of training in motivational interviewing. Training also included identifying depression, anxiety, and levels of social support in participants. Training was based on literature provided by Lindner, Menzies, Kelly & Taylor (2003). No other training details were provided.

Sample: Three hundred and forty-three participants with diabetes.

Design/Methodology: Coaches telephoned participants monthly for 12 months to review progress toward established goals and to help increase self-efficacy through positive behavioural strategies. The telephone coaching framework included: a) motivational interviewing techniques to help participants make lifestyle changes; b) using the stages of change model (Prochaska, DiClemente, & Norcross, 1992); c) encouraging treatment adherence; d) identifying anxiety and depression; e) improving self-efficacy; and f) identifying and strengthening levels of social support. Multiple recruitment methods were used to enrol participants. Participants were coached monthly over the telephone for 12 months. Health outcomes were assessed at 6, 12, and 18 months.

Findings: At 18 months there were significant decreases in self-reported pain ($p < 0.05$), shortness of breath ($p < 0.01$), discouragement of health problems ($p < 0.05$), and frustration with health problems ($p < 0.001$). There were no statistically significant differences in local health services usage.

Limitations: This study had no control group. Due to the study design, it was not possible to establish whether improvements in self-reported outcomes were a result of the coaching or other components of the project. No information was provided on how long each session lasted and whether the sessions were consistent for all participants – this reduces replicability and may have skewed results if some participants received longer coaching sessions than others. Participants were not screened for whether they received prior education on diabetes and self-care management – it was not clear whether improvements were a result of the current coaching intervention or prior knowledge.

Strengths: Various recruitment methods were used to obtain a diverse study sample to increase external validity. Detailed screening procedures were used to allow individuals to participate in the study.

Recommendations: It is recommended that future researchers include a control group for comparison; examining the effectiveness of coaching separately from the other components of the project would help determine its role in the findings; screening participants for prior diabetes self-care management knowledge to obtain baseline information that may impact results; and operationally define the coaching method.

McKay, H.G., King, D., Eakin, E.G., Seeley, J.R., & Glasgow, R.E. (August 2001). The diabetes network internet-based physical activity intervention. Diabetes Care, 24(8), 1328-1334.

Purpose: To assess the effectiveness of an Internet based program to increase physical activity in adults with type II diabetes.

Operational Definition of Coaching: Participants were contacted by a coach (an occupational therapist) five times throughout the eight-week study through personal tailored messages on a website set-up for participants. Coaching was intended to encourage and motivate participants to attain goals set at the beginning of the study. A reference for further clarification regarding the coaching used in this study was not provided.

Sample: Seventy-eight sedentary male and female adults with type II diabetes participated in this study (38 in the intervention group, 40 in the control group). Participants were spread throughout 31 United States and Canadian provinces. The mean age was 52.3 years.

Design/Methodology: Participants had to have type II diabetes, be greater than or equal to 40 years of age, and be below ACSM and CDC guidelines for physical activity. Eligible participants completed an on-line registration form and an assessment questionnaire. Participants were then randomly assigned to the intervention group or the control group. The control group received information regarding physical activity and type II diabetes only. The intervention group received a personalized physical activity program using the Internet Active Lives website and a personal coach. They also received five messages throughout the eight-week intervention. The intervention group also had access to group support with other participants by using the website. Questionnaires were completed at baseline and at the eight-week follow-up.

Findings: Participants reported a moderate increase in both walking and moderate-vigorous physical activity.

Limitations: The training used by the coach was not provided, which limits replicability. Because there was no statistically significant difference between groups on levels of physical activity, the coach and client contact may not have been sufficient. Eligibility criteria are based on self-report and participants may have underreported his/her current physical activity level. Due to lack of significant results, the sample size may have been too small, decreasing power.

Strengths: A randomized design was employed which increases internal validity. A control group was used which helps determine whether the intervention was the reason for a change between groups. The web usage for each participant was tracked to determine whether participants lost interest throughout the eight-week program. A clear chart illustrating the study design was provided. Many of the limitations provided above were outlined in the study.

Recommendations: It is recommended that researchers include information regarding the training received by the coach before initiating the study; including a sample message sent to participants to accurately represent the coach's role would increase replicability; increasing the sample size would help increase power; including a population that represents less educated individuals and minorities with type II diabetes to increase generalizability.

Wagner, P.J., Jester, D.M., & Moseley, G.C. (November 2002). *Medical students as health coaches. Academic Medicine, 77(11), 11-6411-65.*

Purpose: To teach first year medical students how to coach patients to increase health behaviour change.

Operational Definition of Coaching: Students were required to make contact with their patient six times over the year, with three face-to-face visits and one home visit. Coaching was based on the Bayer Institute for Health Care Communication (1998).

Sample: Medical students and patients with diabetes.

Design/Methodology: Medical students were randomly assigned to a health coaching track or a traditional community placement track. In the health-coaching track, two students were assigned to a patient in the community with diabetes. In preparation for the coaching, students were given literature on health behaviour change and were required to take part in eight discussion sessions run by a behaviour change specialist. These sessions lasted for 90 minutes. Both students and patients filled out questionnaires before and after the study. HbA1C levels in patients were also tested before and after. Analysis was not yet completed.

Findings: Unavailable.

Limitations: Very little information was provided on the students who coached and the patients being coached. Students were required to make three face-to-face visits with patients, but the researchers do not mention how students contacted patients the other three times.

Strengths: Provided topics discussed during the eight training sessions with students.

Recommendations: Until analysis is complete and findings are published, recommendations are not provided.

Whittemore, R. (2000). *A coaching intervention to integrate lifestyle change in adults with non-insulin dependent diabetes mellitus (Doctoral dissertation, Boston College, 2000). Dissertation Abstracts Online, 285.*

Purpose: To examine the experience and effect of integrating a nurse-coach into the daily lives of women with NIDDM using health promotion behaviours and glycemic control as indicators.

Operational Definition of Coaching: Participants received eight weeks of nurse-coaching aimed at facilitation diabetes self-care into his/her existing lifestyle. Four coaching sessions were completed throughout the eight-week period and each session was in-person for approximately 60 minutes. Coaching was used to educate, support, and provide guidance to participants.

Sample: Nine female participants completed this study. Participants had to have been diagnosed with NIDDM for at least three months. The average age of participants was 61.78 years.

Design/Methodology: A mixed methods, multiple baselines across participant design was employed. Health care providers approached women eligible for the study. Eligible participants then completed baseline assessments and were introduced to the study. Information pamphlets on diabetes, nutrition, and exercise were given to all participants to review. Participants received eight weeks of nurse-coaching. Baseline assessment results and results obtained at completion of the study were compared to assess the impact of nurse coaching on glycemic control and health promoting behaviours. Each coaching session was audio taped, transcribed verbatim, and used for the qualitative analysis. Participants were required to fill out daily record books which were collected at each coaching session. Completed record books were compensated five dollars for each week. The following scales/questionnaires were used in this study: Index of Readiness Scale, the Environmental Barriers to Adherence Scale, The ADRTC Knowledge Test, the Diabetes Questionnaire, the Dietary Sub-scale of the Summary of Diabetes Self-Care Activities Questionnaire. A daily diary of exercise frequency and intensity was collected from participants.

Findings: Integrating a nurse coach into the daily lives of women with NIDDM is “a multifaceted and complex process”. Quantitative evidence of change in lifestyle was reported.

Limitations: All of the following limitations were outlined in the study. A testing effect may have taken place, which decrease internal validity. Participants were self-referred which may have led to a more motivated population – this factor decreases generalizability. Although an audit trail and memoing were employed, experimenter bias may have influenced results. NIDDM is prevalent in ethnic populations – it is unclear why the researchers chose white females to participate in this study.

Strengths: Triangulation was used which increases confirmability. Audit trails and memoing were used to help reduce researcher bias. All measures were provided and explained in detail. Several theoretical models were used which strengthens the rationale that this intervention will demonstrate statistically significant results. Coaching sessions were audiotaped and quotes from those sessions were provided to help confirm themes that emerged from the transcripts. The researchers did control for extraneous variables by using a homogenous group. The last question of the exit interview asked participants if they missed anything. This allows participants a chance to voice positive feedback or concerns that may not have been described previously.

Recommendations: It is recommended that researchers use a control group to compare results; incorporating different ethnic groups into the study and including men to increase generalizability.

Whittemore, R., Chase, S., Mandle, C.L., Roy, S. (November/December 2001). The content, integrity, and efficacy of a nurse coaching intervention in type 2 diabetes. The Diabetes Educator, 27(6), 887-898.

Purpose: To investigate the effect of a nurse coaching intervention of patients with type II diabetes after diabetes education. Diet and exercise lifestyle changes were the main focus as well as assessing the content, integrity, and efficacy of such a program.

Operational Definition of Coaching: Participants received four coaching sessions lasting approximately three hours in total. Coaching was meant to reinforce education, increase psychosocial support, and provide motivational guidance (Smith, Heckemeyer, Kratt, & Mason, 1997; Estey, Tan, & Mann, 1990).

Sample: Nine Caucasian women participated in this study. One participant was excluded from the quantitative analysis. The mean age was 61.78, the mean duration of diabetes was 9.22 and the mean body mass index was 33.44.

Design/Methods: Nine participants were recruited from a hospital diabetes education program, an internal medicine practice, and a nurse practitioner practice. Participants then met with the investigator for two consecutive days to obtain initial data collection. Daily outcome measures (described in the study) were assessed for 7 to 15 days. After this period, the intervention was provided. Coaching continued for eight weeks with four sessions. The intervention sessions and the exit interview were audiotaped and transcribed verbatim. The One-Touch (Lifescane) system, and the Summary of Diabetes Self-Care Activities Questionnaire were used to measure fasting blood glucose and dietary behaviour respectively. Participants were expected to record a daily diary of type, intensity, and duration of exercise to calculate energy expenditure in kilocalories.

Findings: An increase in health-promoting behaviours and a decrease in fasting blood glucose were observed (a group mean of 138.22 at baseline down to 131.06 at the end of the intervention).

Limitations: It was not clear how participants were selected for this study, which affects replicability. Because there is a qualitative component to this study, purposeful selection is warranted (Greenhalgh & Taylor, 1997), but that information was not provided. How the coaching was administered was not included – this also affects replicability. Content analysis was conducted to review transcripts and identify themes, but it is not clear who performed this task. If the researchers conducted the analysis, potential bias may have impacted results. The overall methods performed for this study is very unclear. It is not evident whether member-checking was used to increase confirmability.

Strengths: Emergent themes were provided with one quote for each theme. The coaching intervention was available through a reference. The instruments used were well described and psychosocial measures and physiological measures were differentiated. The skills used to help participants throughout coaching were included in the study.

Recommendations: Including recruitment information would be beneficial for future researchers interested in conducting similar research; providing detailed information on how the coaching was administered would increase replicability; explaining who conducted the content analysis would clarify whether potential bias was an issue; including member-checking to increase credibility; providing the questions asked in the exit interview for future researchers and readers interested in knowing what was asked.

Whittemore, R., Chase, S. K., Mandle, C., L., & Roy, C. (2002). Lifestyle change in type 2 diabetes. Nursing Research, 51(1), 18-25.

Purpose: To examine the experiences of integrating type 2 diabetes treatment recommendations into an existing lifestyle while participating in a nurse coaching intervention.

Operational Definition of Coaching: The nurse coaching model used for this study was a modified version of the Adaptation of Chronic Illness Model (Pollock, 1993; Roy & Andrews, 1999). Nurse coaching consisted of: providing diabetes information; identifying barriers and facilitators to lifestyle change; providing motivational support; giving feedback and positive encouragement; and goal setting (Whittemore, 2000). Nurse coaching was delivered by an advanced practice nurse and consisted of individual four 45-minute sessions every two weeks.

Sample: 9 women with type 2 diabetes participating in a nurse coaching intervention.

Design/Methodology: Each woman received four 45-minute sessions of nurse coaching every two weeks with an advanced practice nurse. Sessions were audio recorded and transcribed verbatim. A 60-minute interview was conducted at the end of the last coaching session to examine how participants attempted to integrate lifestyle changes since their diagnosis with diabetes.

Findings: Challenges to integrating lifestyle changes included: reconciling emotions; composing a structured lifestyle with new behaviours; striving for satisfaction; exploring self and conflicts; discovering balance; and adjusting to a new rhythm of life. Balance was seen as a main component of structuring a new lifestyle.

Limitations: Participants were not screened for prior attendance to a diabetes educational program as this may have affected the results. Some participants may have had more experience in diabetes care than others and were able to contribute more information during the interviews.

Strengths: Detailed analysis of audio recorded coaching sessions and interviews. All nine women finished the coaching intervention. One practice nurse conducted consistent coaching sessions for all participants.

Recommendations: It is recommended that a control group be used to further examine the qualitative and quantitative aspects of nurse coaching in diabetes care.

Whittemore, R., D'Eramo Melkus, G., Sullivan, A., & Grey, M. (September/October 2004). A nurse-coaching intervention for women with type 2 diabetes. The Diabetes Educator, 30(5), 795-804.

Purpose: To determine the effectiveness of a nurse-coach in increasing maintenance of diabetes self-management in women with type II diabetes.

Operational Definition of Coaching: Six coaching sessions were provided over a six month period by nurse coaches. The objective of the coaching was to educate, assist and provide support to increase management of type II diabetes. A reference for the development of this coaching intervention was provided (Whittemore, Chase, Mandle, & Roy, 2001).

Sample: Forty-nine women with type II diabetes completed the study. Women were between the ages of 30 to 70 years, cleared by a physician to take part in exercise, did not have any complications due to diabetes and had an A1C level greater than 7%.

Design/Methodology: A randomized clinical trial with participants recruited from an outpatient diabetes education center in northeastern Connecticut. Eligible participants were randomly allocated to a treatment group or a control group. The treatment group received standard diabetes care plus six personal coaching sessions over a six-month period from a nurse-coach. Data was collected at baseline, three months and six months. Body mass index was used as a physiologic variable assessment tool. Dietary behaviour was measured using the Dietary Subscale of the Summary of Diabetes Self-Care Activities Questionnaire. Psychosocial variables were assessed using the Problem Areas in Diabetes Survey (PAID), and The Diabetes Questionnaire (TDQ). Finally, treatment satisfaction was assessed using the Diabetes Treatment Satisfaction Questionnaire Change (DTSQc).

Findings: The treatment group demonstrated increased levels of diet self-management ($p = 0.02$), less diabetes related distress ($p < 0.01$), better integration ($p < 0.03$), and more satisfaction with care at 3-months ($p < 0.01$) and 6-months ($p < 0.01$) compared to the control group.

Limitations: It was not clear how the coaching was done (e.g. on the phone or in-person). It was mentioned that between the fifth and sixth week, a brief phone call was provided. As mentioned by the researchers, this study is not particularly generalizable because the women recruited for this study was homogenous in nature.

Strengths: The control group was provided with coaching at the end of the study if they desired. Attrition did occur, but the reasons as to why were provided. The Adaptation to Diabetes Model was used which helps strengthen the rationale for conducting the study. Standard diabetes care was clearly defined. Detailed demographic and instrument information was also provided. Because coaching is relatively new in research, it was an excellent idea to provide a treatment satisfaction questionnaire to determine how to improve the intervention, if at all. Information was given regarding differences between those who participated and those who did not. This information helps determine generalizability and provides information that could be used to create a program for those less likely to participate.

Recommendations: Describe how the coaching was performed; include a more heterogeneous sample.

The following nine studies provide a great starting point for future researchers. Qualitative information was a research method used commonly that provided great insight into what works and what does not work when using coaching as an intervention. Quite a few studies did not provide operational definitions, which made it difficult to understand what was meant by “coaching.” Given that the studies included are varied, further research is still required to assess the relationship of life coaching as a treatment for patients with diabetes.

Dialysis/Renal Failure

The kidney Foundation of Canada (2007) defines dialysis as “a treatment for people in the later stage of chronic renal insufficiency (kidney failure). This treatment cleans the blood and removes wastes and excess water from the body.” Four articles met the inclusion criteria for this project.

Beanlands, H., Horsburgh, M. E., Fox, S., Howe, A., Locking-Cusolito, H., Pare, K., & Thrasher, C. (2005). Caregiving by family and friends of adults receiving dialysis. Nephrology Nursing Journal, 32(6), 621-631.

Purpose: To examine the effects of activities performed by caregivers of adults on dialysis.

Operational Definition of Coaching: Coaching, as performed by the caregiver, involved encouraging the care recipient to perform his or her own self-care. This usually meant promoting adherence to a

prescribed medical regimen to attain a positive health outcome. Coaching consisted of six overlapping categories: motivating; enforcing; teaching; training; supporting; and being present.

Sample: Thirty-seven caregivers of adults on dialysis.

Design/Methodology: A qualitative, descriptive study was carried out using grounded theory methodology. Participants were recruited through local dialysis facilities in Ontario, Canada. Structured interviews were arranged to examine care giving activities.

Findings: Five dimensions of care giving activities were identified through the qualitative analysis. These dimensions included: appraising; advocating; juggling; routinizing; and coaching. Other specific tasks included management of diet, medication and symptoms care, and personal care.

Limitations: It was not clear how much prior training each caregiver had before the interviews. Some participants had more experience in care giving than others and were able to contribute more information during the interviews. Not all relationships between caregivers and recipients were the same. Different relationships could have created different care giving activities and interactions.

Strengths: Use of grounded theory allowed proper examination of care giving activities.

Recommendations: It is recommended that care giving activities be examined for caregivers that have the same relationship with the recipient (certain family relationship or friendship). Screen participants for prior training in care giving to make sure all participants are equal in their care giving ability upon entering the study to reduce a confounding variable that may have impacted results.

Beliveau, L. (Apr-Jun 2004). Comfort coaching. Canadian Association Nephrology Nurses and Technologists Journal, 14(2), 35-36.

Purpose: To reflect on the power of coaching for dialysis patients nearing the end of life. **Operational Definition of Coaching:** Operational definition not provided but coaching was used to encourage, counsel, educate, and support patients.

Sample: Two women receiving dialysis.

Design/Methodology: This narrative was a self-reflective account of Lee Beliveau's experience serving as coach to two women receiving dialysis while also dealing with oesophageal cancer or bilateral renal carcinoma.

Findings: Comfort coaching is a power tool that is beneficial near the end of life; health professionals that are trusted by patients are more beneficial to patient care; exploring patient beliefs becomes a therapeutic experience; establishing new relationships between patients and health professionals takes time to build.

Recommendations: It is recommended that patients being coached record the benefits received from the coaching; use this study to create a qualitative study where nurse coaches interview patients on their experience of being coached.

Fitts, S. S. & Guthrie, M. R. (1995). Six-minute walk by people with chronic renal failure: Assessment of effort by perceived exertion. American Journal of Physical Medicine & Rehabilitation, 74(1), 54-58.

Purpose: To compare the effects of exercise coaching and usual care on distance walked in 6-minutes, heart rate change from pre-exercise to post-exercise, and perceived exertion.

Operational Definition of Coaching: Exercise coaching was delivered in bi-weekly meetings to clarify goals, develop individual programs, practice measurement of target heart rate, demonstrate exercises, review exercise diaries, and discuss motivational literature. It was not clear who provided the exercise coaching. No operational definition of coaching was provided.

Sample: Twenty adults between the ages of 22 and 67 with chronic renal failure.

Design/Methodology: Patients were randomly assigned to the exercise or control group. Participants were tested twice on the same day and again three months later. The first test was done to eliminate any

practice effect. Participants filled out quality of life questionnaires between the first and second tests. Participants were not told of their group assignment until after the second test was completed. Control group participants were told to continue their usual activities.

Findings: Exercise group participants increased their walking distance ($p < 0.05$) over the distance walked by the control group. Exercise group patients had no change in physical exertion or heart rate while control group patients had an increase in physical exertion and a decrease in heart rate.

Limitations: It was not clear who provided the exercise coaching and whether all exercise group participants received consistent coaching. No operational definition of coaching was provided.

Strengths: Detailed screening procedures were used for entry to the study. Renal disease specific symptoms checklist scores indicated similar health statuses for the two groups. This study used randomization to allocate patients into the exercise and control groups increasing the chances that the only difference between the groups would be if they received or did not receive the intervention.

Recommendations: A clear coaching protocol would increase replicability. It is recommended to future researchers that qualitative data be used to assess participants' perceptions of exercise coaching

McMurray, S. D., Johnson, G., Davis, S., & McDougall, K. (2002). Diabetes education and care management significantly improve patient outcomes in the dialysis unit. American Journal of Kidney Diseases, 40(3), 566-575.

Purpose: To compare the effects of a diabetes education with motivational coaching program and standard care on improving glycemic control, altering patient behaviour, and reducing diabetic complications.

Operational Definition of Coaching: Motivational coaching consisted of practical assistance for living with diabetes, emotional support, problem solving, and encouragement. A diabetes care manager with assistance from a dialysis facility social worker provided the coaching intervention. Hemodialysis patients were coached every 1- to 2-weeks while peritoneal dialysis patients were coached monthly with telephone calls in between clinic visits. No other coaching details were provided.

Sample: Eighty-three patients undergoing hemodialysis or peritoneal dialysis with a diagnosis of type 1 or type 2 diabetes mellitus.

Design/Methodology: Patients were randomly assigned to the treatment or control group. At recruitment and at the end of the 12-month study period, questionnaires were given to all participants. These questionnaires examined diabetes health history, self-management knowledge, self-care behaviours, and quality of life. Patients in the treatment group received: diabetes self-management education; diabetes care monitoring and management; foot status monitoring; annual eye examinations; nutritional counselling; and motivational coaching. The intervention ran for 12 months and was conducted by a diabetes care manager. Patients in the control group received standard diabetes care and blood glucose monitoring.

Findings: No amputations occurred in the treatment group while 5 occurred in the control group ($p < 0.05$). Significantly more people were hospitalized for diabetes related reasons in the control group versus the treatment group ($p < 0.002$). Haemoglobin levels decreased from 6.9 to 6.3 in the treatment group ($p < 0.005$) – results were unchanged for the control group. A statistically significant increase in quality of life scores were reported from the treatment group compared with the control group ($p < 0.001$).

Limitations: Not all patients in the treatment group received the same amount of coaching which may have impacted results. It is not evident whether other components of the program or the motivational coaching had a positive effect on the treatment patients. It is not clear whether patients in the control group may have been demoralized for receiving the less desirable treatment which may have decreased internal validity and impacted results.

Strengths: Detailed recruitment information was used to screen patients for this study. A detailed treatment protocol was established and used for this study.

Recommendations: Clear coaching guidelines should be established. Although not the purpose of this study, it may be of interest to future researchers to capture patients' perceptions of coaching. The effectiveness of coaching should be examined separately from other program components.

Two out of the four studies presented in this section qualitatively assessed life coaching as an intervention for individuals on dialysis or experiencing renal failure. Both studies provided valuable information that could be used to tailor programs accessible to patients. The quantitative studies found statistically significant results, which strengthens the relationship between life coaching and dialysis/renal failure. It is recommended that future studies continue to assess this relationship with clear operational definitions of coaching and more rigorous methodology.

Dyspnea

Morgan and Hodge (1998) define dyspnea on the American Academy of Family Physicians website "as abnormal or uncomfortable breathing in the context of what is normal for a person according to his or her level of fitness and exertional threshold for breathlessness." Three studies met the inclusion criteria of this section.

Carrieri-Kohlman, V., Gormley, J. M., Douglas, M. K., Paul, S. M., & Stulbarg, M. S. (1996). Exercise training decreases dyspnea and the distress and anxiety associated with it: Monitoring alone may be as effective as coaching. CHEST, 110(6), 1526-1535.

Purpose: To compare the effects of nurse monitoring and nurse coaching on dyspnea, dyspnea related anxiety, exercise performance, self-efficacy for walking, and dyspnea with daily living activities.

Operational Definition of Coaching: A master's prepared nurse provided the coaching. Coached participants viewed a videotaped show on relaxation and breathing strategies before each of the first two sessions. At the beginning of each of the 12 sessions, the nurse coach helped participants set goals related to their prior performance and clinical status. Coaching for this intervention was based on guided mastery techniques (Carrieri-Kohlman, Douglas, Gormley, & Stulbarg, 1993; Williams, 1990). Guided mastery techniques included: vicarious experiences; verbal persuasion and; physiological feedback.

Sample: Fifty-one dyspnea-limited patients with chronic obstructive pulmonary disease.

Design/Methodology: Participants came to the laboratory for baseline measures and screenings. Those who completed at least one stage of an incremental treadmill test without cardiac or musculoskeletal limitations were randomly assigned to the monitored exercise or coached groups. All participants underwent 12 treadmill exercise sessions over the course of 4- to 6-weeks. After the 12 sessions, participants returned for repeated treadmill testing, a six-minute walk, and questionnaires. Participants in the nurse monitoring group received only initial instructions about their exercise sessions.

Findings: Dyspnea intensity and the distress and anxiety associated with it decreased significantly as a result of the 12 supervised treadmill exercises ($p < 0.05$). However, no significant differences in exercise performance, self-efficacy for walking, and dyspnea with daily living activities were detected between the two groups.

Limitations: Patients may have already developed techniques to deal with dyspnea prior to entering the study because 16 patients were previously exposed to educational or rehabilitation programs prior to the study. It is not clear whether effects were a result of prior educational or rehabilitation programs or the current intervention. The coaching group had individualized coaching sessions. Not all coached participants received the same amount of coaching. With such coaching differences, it is difficult to examine the true effect of the coaching intervention.

Strengths: No significant differences existed in baseline demographics, spirometry, or anxiety resulting in a homogenous group which makes it easier to detect whether it was the treatment that caused the reported effect rather than confounding variables that may have been present at baseline.

Recommendations: It is recommended that patients who have had prior educational or rehabilitation training for dyspnea not be included in the study as this would not show the true effect of the coaching intervention. Coaching sessions that are consistent for each experimental participant would help eliminate any potential confounding variables that may impact results.

Carrieri-Kohlman, V., Gormley, J. M., Douglas, M. K., Paul, S. M., & Stulbarg, M. S. (2001). Dyspnea and the affective response during exercise training in obstructive pulmonary disease. Nursing Research, 50(3), 136-146.

Purpose: To compare the effects of nurse monitoring and nurse coaching on dyspnea, dyspnea related anxiety, and exercise performance in patients receiving exercise training.

Operational Definition of Coaching: Coached participants viewed a videotaped show on relaxation and breathing strategies before each of the first two sessions. At the beginning of each of the 12 sessions, the nurse coach helped participants set goals related to their prior performance and clinical status. Coaching for this intervention was based on guided mastery techniques (Carrieri-Kohlman, Douglas, Gormley, & Stulbarg, 1993; Williams, 1990). Guided mastery techniques included: vicarious experiences; verbal persuasion; and physiological feedback.

Sample: Forty-five dyspnea-limited patients with chronic obstructive pulmonary disease.

Design/Methodology: Participants came to the laboratory for baseline measures and screenings. Those who completed at least one stage of an incremental treadmill test without cardiac or musculoskeletal limitations were randomly assigned to the monitored exercise or coached group. All participants underwent 12 treadmill exercise sessions over the course of four- to six-weeks. After the 12 sessions, participants returned for repeated treadmill testing, a six-minute walk, and questionnaires. Participants in the nurse monitoring group received only initial instructions about their exercise sessions.

Findings: Significant differences in dyspnea occurred over time between the two groups, with monitored participants achieving a greater decrease in mean dyspnea scores ($p = 0.014$). There were significant decreases in dyspnea-related anxiety for the total sample ($p = 0.002$). Coached participants expended significantly more total calories over time than monitored participants ($p = 0.007$).

Limitations: Each coached participant had individualized coaching sessions. Not all coached participants received the same amount of coaching. With such coaching differences, it is difficult to examine the true effect of the coaching intervention.

Strengths: One research nurse conducted all measurements for both groups and maintained consistency. Both groups were matched as there were no significant differences between participants at baseline. This aids researchers in determining whether the treatment was associated with the observed effects.

Recommendations: It is recommended that coaching sessions should be consistent for each participant to examine the true effect of coaching.

Stulbarg, M. S., Carrieri-Kohlman, V., Gormley, J. M., Tsang, A., & Paul, S. (1999). Accuracy of recall of dyspnea after exercise training sessions. Journal of Cardiopulmonary Rehabilitation, 19(4), 242-248.

Purpose: To compare the effects of nurse monitoring and nurse coaching on recall of dyspnea intensity and anxiety after exercise.

Operational Definition of Coaching: Coached participants viewed a videotaped show on relaxation and breathing strategies before each of the first two sessions. At the beginning of each of the 12 sessions, the nurse coach helped participants set goals related to their prior performance and clinical status. Coaching

for this intervention was based on guided mastery techniques (Carrieri-Kohlman, Douglas, Gormley, & Stulbarg, 1993; Williams, 1990).

Sample: Forty-four dyspnea-limited patients with chronic obstructive pulmonary disease.

Design/Methodology: Same methodology and design as previous study on Page 100.

Findings: No significant differences in outcomes between the groups were observed. The results for the two groups were combined and patients with chronic obstructive pulmonary disease could accurately recall dyspnea and dyspnea related anxiety.

Limitations: Patients may have already developed techniques to deal with dyspnea prior to entering the study. It was not clear whether effects were a result of prior educational or rehabilitation programs or the current intervention. Each coached participant had individualized coaching sessions. Not all coached participants received the same amount of coaching. With such coaching differences, it is difficult to examine the true effect of the coaching intervention.

Strengths: No significant differences existed in baseline demographics or anxiety at baseline which helps determine whether the treatment was associated with the observed effects. One research nurse conducted all measurements for both groups and kept measuring techniques consistent.

Recommendations: It is recommended that patients that have had prior educational or rehabilitation training for dyspnea should not be included in a future study as this would not show the true effect of the coaching intervention. Coaching sessions that are consistent for each experimental participant reduces that chance of a confounding variable impacting results.

The following three studies did report some decreases in dyspnea levels. Given that non-significant results were also reported for each study, further research is still needed to assess the relationship between life coaching and dyspnea.

Fitness/Exercise/Physical Activity Participation

Life coaching has gained popularity as an intervention to increase physical activity and exercise participation in a variety of individuals prone to a sedentary lifestyle. The following five articles assessed life coaching as an intervention to increase physical activity and exercise participation for older adults, individuals diagnosed with diabetes, and adults with intermittent claudication (cramping sensation in the legs).

Adelman, A.M., & Graybill, M. (July/August 2005). Integrating a health coach into primary care: Reflections from the Penn State Ambulatory Research Network. Annals of Family Medicine, 3(supplement 2), S33-S34.

Purpose: To evaluate the effectiveness of implementing a health-coach model of behaviour change into a primary care setting to increase physical activity and improve diet with obese individuals. A secondary purpose was to assess the effect of a motivational program run by a health-coach to improve unhealthy behaviours.

Operational Definition of Coaching: Strategies used during coaching can be found at Botelho (2002a) and Botelho (2002b).

Sample: Patients who were obese.

Design/Methodology: Participants were invited to partake in a study by nursing staff and clinicians in four family practice sites. Those willing to participate met with a health-coach who collected preliminary information. Afterwards, each participant was assigned to a health coach that provided support every two to four weeks for six months. Participants completed a questionnaire at the end of the study as well as an exit interview.

Findings: Out of 92 participants, 44 (48%) demonstrated a change in eating habits, physical activity or both.

Limitations: There was very little demographic information provided for both the coaches and patients. It was unclear whether these findings are transferable to other clinical settings because there was little information on the study participants. The length of each coaching session or the frequency of face-to-face, e-mail, and telephone contact was not provided which limits replicability. The researchers' perspectives were not mentioned in the article, which limits the readers' ability to fully understand how to interpret the results (Greenhalgh & Taylor, 1997). Although this is a reflection of a study conducted, interview questions and data analysis strategies should have been provided to increase replicability and to assess internal and external validity.

Strengths: The principles used during coaching are explained well. The purpose is clearly identified for readers. The study's purpose did justify a qualitative component.

Recommendations: It is recommended that detailed information regarding study participants, coaches, and coaching sessions be included for future researchers interested in conducting similar research; including the researchers perspective, interview questions, and quotes would help support findings.

Allison, M.J., & Keller, C. (2004). Self-efficacy intervention effect on physical activity in older adults. Western Journal of Nursing Research, 26(1), 31-46.

Purpose: To assess the effectiveness of a nurse coach in increasing self-efficacy towards physical activity in older adults and to examine physical activity on recovery level after a cardiac event.

Operational Definition of Coaching: Coaches used the four-point model of verbal self-efficacy enhancement when interviewing participants and a social cognitive protocol (Allen, 1996; Debusk et al., 1994). Coaches used verbal persuasion, monitored achievements, and awareness of physiological arousal to help increase self-efficacy of physical activity. It is not clear, but it appears that participants received coaching over the phone every two weeks for 12 weeks.

Sample: Eighty-three older adults from a Phase I cardiac rehab program participated in this study. Participants ranged in age from 65 to 80 years, were diagnosed with coronary heart disease and were referred to Phase I cardiac rehabilitation.

Design/Methodology: This study was a three-group time-series design. Participants were recruited from Phase I cardiac rehabilitation programs from one of two medical centers. Participants were randomly assigned to three groups: 1) self-efficacy coaching intervention (SECI_E); 2) attention control (AC_E); 3) usual care group. The SECI_E group received coaching sessions for 12 weeks. The AC_E group received a telephone call every two weeks and were asked to report on his/her progress. The usual care group received the same discharge information provided to patients following cardiac rehabilitation. A series of independent questionnaires were used to assess self-efficacy expectations. The PASE was used to assess physical activity and the 6MWT was used to measure functional exercise capacity. The Borg Perceived Exertion Scale was used to ensure excessive or dangerous effort was not exerted.

Findings: The SECI_E group demonstrated greater physical activity performance compared to the AC_E group (15.46% compared with 6.49%). The study did not show a direct effect on level of physical activity self-efficacy; however there was an indirect interaction between distance walked and physical activity confidence. Self-efficacy related to distance walked increased significantly over time for all groups ($p < 0.0001$). Distance walked increased significantly at both collection points ($p < 0.0001$).

Limitations: It was not clear how often the coaching session took place and for how long. This information decreases replicability. Because participants are all part of one Phase I rehabilitation center, interaction between groups may have occurred. As described by Cook and Campbell (1979), compensatory rivalry or compensatory equalization of treatments may have transpired decreasing internal validity. Participants were recruited from one center, which decreases generalizability. As noted by the

researchers, the AC_E group may have been similar to the coaching intervention and may not have been sufficiently different to measure a difference.

Strengths: Random assignment to treatment groups which increases internal validity was used. Instruments used were well described. Demographic information was included. Attrition did occur and the reasons as to why were provided. Information was also included on the differences or similarities between those that left the study and those that continued. This helps researchers tailor a program designed specifically to help retain future participants.

Recommendations: It is recommended that future researchers remove the AC_E group or alter this group so that it is sufficiently different from the other treatment groups to accurately report a difference between treatments; providing detailed information on the specifics of the coaching intervention would increase replicability; recruiting participants from a variety of cardiac rehabilitation centres would increase generalizability; ensuring that participants are not in contact with one another would increase internal validity.

Engel, L., & Lindner, H. (2006). Impact of using a pedometer on time spent walking in older adults with type 2 diabetes. The Diabetes Educator, 32(1), 98-107.

Purpose: To assess the impact of using a pedometer in older adults with type 2 Diabetes on time spent walking while involved in a coaching intervention.

Operational Definition of Coaching: Coaching took place six times during a six-month period. The type of coaching used was not provided; however, references for strategies used during coaching were provided (Lindner, Menzies, Kelly, Taylor & Shearer, 2003; Zeus & Skiffington, 2002; Joseph, Griffin, Hall & Sullivan, 2001).

Sample: A total of 57 men and women with type 2 diabetes aged 50-70 years. **Design/Methodology:** This study was a randomized controlled trial. Participants were randomly allocated to a treatment group who received coaching and a pedometer or the control group who received coaching only. Participants were recruited by a local media campaign. Both groups were instructed to record the amount of time spent walking each day and the pedometer group also had to record the amount of steps taken.

Findings: Both groups significantly increased their time spent walking ($p = 0.000$). Against the original hypothesis, the control group spent more time walking than the treatment group ($p = 0.02$).

Limitations: The amount of time spent walking was based on self-report data. Participants may have recorded more time spent walking to impress investigators. The authors do not mention whether the control and treatment group were ever in contact which may have affected internal validity. Criteria involved in the coaching were mentioned, but a complete reference of the type of coaching used was not provided which decreases replicability.

Strengths: The authors did provide information regarding the 12% of participants that left the study part way through its duration. The skills used during coaching sessions were provided which increases replicability. Any differences between the two groups were outlined to account for any confounding variables that may have impacted results.

Recommendations: It is recommended that measures be administered by the research team to eliminate self-report bias; reporting on whether the treatment group and control group had contact would clarify whether internal validity was compromised; including a third control group with no pedometer and no coaching to determine whether coaching has an effect on time spent walking with type 2 diabetes patients; providing a reference corresponding to the type of coaching used would increase replicability.

Gorczynski, P. (2007). Impact of Co-active Coaching on Physically Inactive 12 to 14 Year Olds in London, Ontario. Unpublished masters thesis, University of Western Ontario.

Purpose: To assess the impact of Co-active coaching on physical activity participation, screen viewing time, self-efficacy, social support, and perceived behavioural control among physically inactive youth in London, Ontario.

Operational Definition of Coaching: Co-active coaching was used throughout the trial. Co-active coaching is a specific form of life coaching that is client centred. A unique and fluid alliance is formed between the practitioner and the client that is specifically designed to meet and adjust to the needs of the client. Coaches do not give their clients advice or tell them what to do, but instead hold them “naturally creative, resourceful, and whole” (Whitworth, Kimsey-House, & Sandahl, p. 3). All coaching sessions were conducted over the telephone. Coaching consisted of a 1-hour intake session followed by 5 sessions that lasted approximately 30 minutes.

Sample: Five youth between the ages of 12 and 14 years.

Design/Methodology: A multiple-baseline across participants single case-experimental design was used. Six Co-active coaching sessions were conducted over two months by a Certified Professional Co-active Coach (CPCC). Levels of physical activity were measured three times per week for the duration of the coaching study while psychosocial variables measured before and after the treatment using reliable and validated self-report questionnaires. Post treatment interviews assessed participants’ perceptions of the Co-active coaching experience. Paired t-tests were used to compare mean scores for pre- and post-treatment psychosocial variables.

Findings: The results of this study produced several findings pertaining to physical activity and psychosocial variables. First, physical activity increased for participant 5; however, this increase was not statistically significant. The other participants' physical activity remained unchanged. Second, total screen viewing time, which included the amount of time participants watched television, played video games, and surfed the Internet, significantly increased for participants 3 and 5 and remained the same for participants 1, 2, and 4. Participant 3's mean total screen viewing time increased from 2.86 hrs/day in the baseline phase to 7.90 hrs/day in the follow-up phase. Additionally, the Binomial test indicated a significant increase in total screen viewing time when comparing the treatment data ($p < .001$) and follow-up data ($p < .05$) with projected total screen viewing time. Participant 5's mean total screen viewing time increased from 3.67 hrs/day in the baseline phase to 5.83 hrs/day in the follow-up phase. Additionally, the Binomial test indicated a significant increase in total screen viewing time when comparing the treatment data ($p < .001$), but not follow-up data ($p > .05$), with projected total screen viewing time. Paired t-tests were used to compare mean scores for pre- and post-treatment psychosocial variables. There were no significant changes in self-efficacy, social support, and perceived behavioural control with specific regard to becoming more physically active. Post treatment interviews conducted with the participants indicated several common themes about Co-active coaching, parental involvement in physical activity, and the study design and methodology. Several participants confirmed that they enjoyed discussing health issues with the Co-active coach, and four participants indicated that coaching strongly reinforced their belief that being physically active is important to good health and well-being.

Limitations: One participant only received 5 coaching sessions in total which may have had an effect on physical activity and related psychosocial variables. Participants waited as long as two months from the time they were recruited to the time they received their first coaching session. Knowledge and anticipation of being in a treatment designed to measure the impact on physical activity may have inadvertently increased participants’ levels of physical activity before the start of the study.

Strengths: An operational definition of coaching was used for the study that clearly outlined the coaching method. One Certified Professional Co-active Coach was used throughout the study which ensured each

participant received an equal level of coaching. Questionnaires that assessed physical activity and psychosocial variables were reliable and validated. A script was written and used during the post treatment interviews that enabled the researcher to conduct interviews consistently.

Recommendations: Because physical activity to improve health and well-being is only minimally associated with increased levels of physical activity, future research should consider an additional recruitment criteria to increase adherence to the coaching program. Coaching sessions should also be audio recorded and analyzed by inductive content analysis. Such an analysis would keep track of all the specific coaching tools and techniques used throughout the treatment. This would also ensure that Co-active coaching actually took place. Parents should be included in the coaching sessions to increase parental involvement and support to be physically active.

Tidwell, L., Holland, S., Greenberg, J., Malone, J., Mullan, J., & Newcomer, R. (2004). Community-based nurse health coaching and its effect on fitness participation. Lippincott's Case Management, 9(6), 267-279.

Purpose: To investigate the effects of a nurse health coach, a social worker, and a geriatrician, using a client developed health action plan, nurse health coaching, patient education instruction and classes, and a fitness program to increase physical activity, improve chronic disease self-management, and improve self-confidence in communicating with a primary care physician. **Operational Definition of Coaching:** An operational definition was not provided but coaching was used to empower participants through encouragement to make healthy choices towards a healthier way of living as outlined by the Case Management Society of America (CMSA, 2002).

Sample: Five hundred and four male and female California Public Employees Retirement system (CalPERS) members, with one or more qualifying chronic health condition(s), and 65 years or older were eligible for this study. Each participant had to be part of at least one of three Medicare managed care programs.

Design/Methodology: A randomized control trial with half the participants randomly assigned to the treatment and control group. Participants in the experimental group were aided in fulfilling their health goals by having access to a health coach, patient education instruction and classes, a fitness program and referrals to programs in the community. All participants received the Health Matters newsletter.

Findings: After one year, nearly all participants engaged in at least one activity, as well as 90% of participants were engaged in at least one exercise program. Class attendance dealing with chronic disease self-management and increasing self-confidence in communicating with a primary care physician was low. No conclusions were made regarding these two objectives.

Limitations: The researchers failed to explain how each participant was coached – decreasing replicability. As well, the nurse coach was part of a health coaching team that provided health education, counselling, and medication management coaching. It is unclear whether the coach influenced participants or whether it was the social worker or geriatrician. The authors did not mention whether the control group had contact with the treatment group which may have impacted internal validity. In addition, participants were aware that CalPERS was involved in the study, which may have influenced their participation.

Strengths: The researchers did acknowledge limitations to the study. They clearly explained who was eligible to participate and provided a reference for the coaching guidelines. This information increases replicability.

Recommendations: Specific details pertaining to the coaching sessions would increase replicability; information regarding contact between the control and treatment group would determine whether internal validity was affected; isolating the coaching, education, and fitness classes would help determine which has the greatest effect on increasing fitness participation.

Wullink, M., Stoffers, H. E. J. H., & Kuipers, H. (2001). *A primary care walking exercise program for patients with intermittent claudication. Medicine & Science in Sports & Exercise, 33(10), 1629-1634.*

Purpose: To examine the effect of coaching on improving walking performance and adherence in patients with intermittent claudication (cramping sensation in the legs).

Operational Definition of Coaching: Patients were coached according to the Health Counseling Model (HCM) (Gerards, 1997). Patients met with the counsellor every 3 weeks for 10 minutes over the course of 24 weeks. Counsellor training was not discussed.

Sample: Thirty-one intermittent claudication patients with a rest ankle-brachial pressure index of less than .90

Design/Methodology: Patients were instructed to walk at least three times a week, three times a day. Participants were told to walk at their individual speed and to walk through when the pain started. They were permitted to stop before the maximum level of pain was attained. Patients were also coached for 24 weeks. Their walking performance was measured at baseline and at 6, 12, and 24 weeks.

Findings: Both treadmill initial claudication distance and corridor absolute claudication distance improved significantly from 289 m to 347 m and from 241 m to 373 m respectively ($p < 0.05$). Significantly higher speeds were attained in the corridor test than on the treadmill test ($p < 0.01$).

Limitations: This study did not have a control group for which to compare coaching effects. It was not clear what kind of training the counsellor had in coaching or the HCM which decreases replicability.

Strengths: The Walking Impairment Questionnaire was a valid measurement questionnaire. Detailed screening procedures were used to accept participants into the study which future researchers could also use.

Recommendations: It is recommended that a control group be integrated into the study design to compare coaching results against and coach training should be discussed and explained in detail for replicability.

The following five articles assessed the effectiveness of a coaching program to increase fitness and exercise participation. Statistically significant increases in fitness and exercise participation were reported. It is recommended that control groups be implemented to compare findings. Given that the study participants varied significantly between studies, it is recommended that future research be conducted to further assess the effectiveness of life coaching for this health issue.

Health Promotion

Only one study met the inclusion criteria for this section.

Yen, L., Edington, M. P., McDonald, T., Hirschland, D., & Edington, D. W. (2001). *Changes in health risks among the participants in the United Auto Workers—General Motors LifeSteps Health Promotion Program. American Journal of Health Promotion, 16(1), 7-15.*

Purpose: To examine the health risk changes among participants of LifeSteps, a multi-component worksite health promotion program.

Operational Definition of Coaching: No formal definition of health coaching was given. No information was provided on who the coaches were or what training they received.

Sample: Twelve thousand nine hundred and eight-four active employees at General Motors (GM) who voluntarily participated in a health risks appraisal (HRA) for 2 years.

Design/Methodology: The program consisted of an annual HRA, a 1-800 nurse line, a health self-care book, a quarter annual newsletter, and a website. The HRA was mailed to the GM population in the United States and changes in overall health risk measures were examined among two-time HRA

participants. A pilot program was also added at two work sites that consisted of health risks screening, wellness programs, a materials resource. For high risk individuals, telephone health coaching and vouchers for medical office visits were implemented.

Findings: A greater decrease in the number of health risks was observed with greater nationwide and pilot program participation. The low risk status group increased from 63.6% in year one to 66.7% in year two. The decrease was significantly related to the number of health risks at baseline ($p < 0.05$).

Limitations: No formal definition of coaching was given. No information was provided on telephone health coaching which reduces replicability. The study did not mention whether all high-risk participants used telephone health coaching. It was not possible to tell if coaching or another program component had an effect on health risks.

Strengths: All the measures of health risk factors were reliable. Both qualitative and quantitative measures were used to assess health risks increasing the information available to answer the purpose of the study.

Recommendations: It is recommended that each individual program component be examined individually and an operational definition of health coaching should be provided to increase replicability.

Life coaching as an intervention to increase health promotion behaviour is in its infancy. Research is needed with operational definitions of coaching and coaching only treatment groups to further assess the relationship between life coaching and health promotion.

Holistic Medicine

This short section was meant to include research assessing life coaching as a tool for aiding patients undergoing holistic treatments. Lack of completed studies using life coaching in such a way garnered zero results. However, the article presented below did present an interesting example of a study that could use life coaching as an intervention.

Ventegodt, S., Morad, M., Kandel, I., & Merrick, J. (2004). Clinical holistic medicine: treatment of physical health problems without a known cause, exemplified by hypertension and tinnitus. The Scientific World Journal, 4, 716-724.

Purpose: To acknowledge and bring forth the idea that holistic medicine can help patients as the physician works as coach to help increase personal development of his/her life.

Operational Definition of Coaching: When patients come with a biological ailment, holistic physicians work with the “whole” person (mental, emotional, spiritual, social, etc. components of ones life) to cure the ailment.

Sample: No particular sample was used.

Design/Methodology: This journal article was more of an educational piece to bring awareness to physicians as they can act as coach to help a patient cure an ailment without the use of drugs for the rest of his/her life.

Recommendations: A qualitative study interviewing patients before and after receiving coaching from his/her physician, may help physicians better serve patients.

Given that there is no published literature assessing life coaching as an intervention for individuals undergoing holistic treatments, this area of health research provides an excellent avenue to investigate further.

Immunization, Venipuncture/Bone-Marrow Aspirations and Lumbar Punctures

The purpose of the following section was to present studies that assessed the effectiveness of life coaching as a treatment for individuals undergoing immunization, venipuncture (drawing blood)/bone-marrow aspirations and lumbar punctures. The seven studies presented below assess the effectiveness of life coaching as a treatment to decrease distress in children receiving the procedures listed above, as well as lowering distress in parents and health care providers.

Blount, R. L., Bachanas, P. J., Powers, S. W., Cotter, M. W., Franklin, A., Chaplin, W., Mayfield, J., Henderson, M., & Blount, S. D. (1992). Training children to cope and parents to coach them during routine immunizations: Effects on child, parent, and staff behaviours. Behavior Therapy, 23, 689-705.

Purpose: To compare the effects of distraction with parent coaching and no treatment on child distress during immunizations.

Operational Definition of Coaching: No operational definition of coaching was provided.

Sample: Sixty children between the ages of 3 and 7 and their parents.

Design/Methodology: Participants were either scheduled or seen on a walk-in basis for immunizations. Parents were asked about their child's distress levels during injections. Children were placed in either a high or low distress group based on their parents' responses. The child was then randomly assigned to either the control or treatment group. In the control group, parents were asked to provide demographic information and the child was evaluated for fear using a faces scale. After the questionnaires, control participants then received their immunizations. In the treatment group, parents were taught how to coach their children during the immunization. The coaching consisted of having the child use a party blower as a form of distraction during the injection. Children were taught how to use the party blower to facilitate proper breathing. Training took approximately 10 to 12 minutes and then parents and children filled out their pre-injection questionnaires. During the immunization, each child sat on his or her parent's lap. After the injection, children, parents, and staff were asked to fill out post-injection questionnaires.

Findings: Child distress was significantly lower for the coached children ($p < 0.001$). Trained parents used significantly more coping commands ($p < 0.001$) and reported that both they and their children were less distressed during the procedure when compared to how they normally felt during injections.

Limitations: No operational definition of coaching was given.

Strengths: A detailed screening procedure for each child's previous distress level was used to allocate children to the proper group in order to gather accurate baseline information to determine if the treatment had an effect. One researcher provided consistent parent and child training which eliminates different teaching techniques as a confounding variable.

Recommendations: It is recommended that an operational definition of coaching be provided. Although it was not the purpose of the study to assess whether the child training or the parent coaching was associated with the reported findings, it would be interesting to assess the effectiveness of parent coaching only to determine its effectiveness at reducing child distress.

Blount, R. L., Powers, S. W., Cotter, M. W., Swan, S., & Free, K. (1994). Making the system work: Training pediatric oncology patients to cope and their parents to coach them during BMA/LP procedures. Behavior Modification, 18(1), 6-31.

Purpose: To examine the effects of child training and parent coaching on levels of distress during bone marrow aspirations and lumbar puncture procedures.

Operational Definition of Coaching Used: No operational definition of coaching was provided. Parents coached their children to use a party blower during bone marrow aspirations or lumbar puncture procedures.

Sample: Three pediatric oncology patients between four and seven years of age.

Design/Methodology: Children were trained to use a party blower to distract them from the painful medical procedure and encourage deep relaxing breathing. Parents were taught to coach their children to use the party blower during the medical procedure. Parents were given the opportunity to role-play and practice their coaching techniques with their children. The number of training sessions varied for each participant.

Findings: All participants increased coping skills and decreased observable distress after the first treatment session. Baseline distress levels ranged from 14.1 to 15.8. Final distress levels ranged from 3.5-6.3. One child returned to baseline levels of coping and distress. Parents maintained their coaching skills throughout the intervention.

Limitations: The sample was small and no significant results were reported. No operational definition of coaching was given. Training sessions varied in length from 10 to 45 minutes. It was not clear whether lower levels of distress or higher levels of coping were a result of child training or the parent coaching. There was no control group to compare results.

Strengths: A detailed screening procedure for participant participation was used which gathered detailed baseline information to compare with final results.

Recommendations: It is recommended that training sessions be consistent for every participant. A control group would be beneficial to evaluate the intervention against standard care.

Cohen, L. L., Blount, R. L., Jansevics Cohen, R., Ball, C. M., McClellan, C. B., & Bernard, R. S. (2001). Children's expectations and memories of acute distress: Short- and long-term efficacy of pain management interventions. Journal of Pediatric Psychology, 26(6), 367-374.

Purpose: To compare the effects of typical care, coaching and distraction, and a topical anaesthetic on children's expectations and 6-month recollections of a three injection vaccination series.

Operational Definition of Coaching: No operational definition of coaching was provided.

Sample: Twenty-two students in grade 4 who were to receive a three injection vaccination series.

Design/Methodology: A repeated measures design was used to examine expectations, experiences, and memories of distress across three conditions for a three injection vaccination series. Children in groups of three to five were called to come to the clinic. Children in the typical care group received the nurse's regular care. In the coaching and distraction group, the nurse told the children to select and begin watching a movie. The nurse used comments, commands, and gestures to ensure children paid attention to the movie before, during, and after the injection. The nurse also attended to the children when they appeared distressed or needed reassurance. In the topical anaesthetic group, children received the anaesthetic two hours prior to the injection.

Findings: Children's expectations of distress were significantly higher than their experience of distress in all three conditions ($p < 0.05$). Coaching and distraction results were not significantly different than the other two conditions.

Limitations: Children may have become desensitized to pain or the experience as they received their second and third injections resulting in a testing effect which affects internal validity (Cook & Campbell, 1979). Because children were in groups of three to five, social pressures may have influenced their less distressed scores. It is not clear whether all children received the same amount of coaching which may have impacted results.

Strengths: One research nurse conducted all vaccinations and kept each intervention consistent.

Recommendations: It is recommended that children receive the intervention individually so they do not have social pressures weighing on them. It is also recommended that children be examined qualitatively about their coaching experience to determine whether the coaching was impactful and if not, how it could be changed.

Cohen, L. L., Blount, R. L., & Panopoulos, G. (1997). Nurse coaching and cartoon distraction: An effective and practical intervention to reduce child, parent, and nurse distress during immunizations. Journal of Pediatric Psychology, 22(3), 355-370.

Purpose: To compare the effects of nurse coaching, nurse coaching plus parent training, and standard care on child, parent, and nurse distress levels during immunizations.

Operational Definition of Coaching: Two nurses provided the coaching. Both nurses received approximately 15 minutes of intervention training prior to the study. Coaching consisted of making sure children watched a selected movie during the immunization process and attending to the child during times of distress. A reference for further information on the coaching method was not provided.

Sample: Ninety-two children between the ages of 4 and 6 and their parents.

Design/Methodology: Children were assigned to nurse coaching, nurse coaching plus parent training, or standard medical care. In the nurse coaching group, parents were asked to describe their usual method of interacting with or assisting their children during painful medical procedures. Afterwards, nurses prompted the child to select a movie to view during the immunization. Nurses asked the child questions about the movie and directed the child to continue watching the movie before, during, and following the injection. In the nurse coaching plus parent training group, parents and children underwent the same procedure as those in the nurse-coaching group, but parents received additional training on coaching their children throughout the immunization. In the standard care group, there was no movie to watch and the nurse performed typical duties.

Findings: Children in both intervention groups displayed more coping behaviours than the children in the standard care group ($p \leq 0.001$). Children in the intervention groups displayed significantly less distress ($p \leq 0.001$), need for restraint ($p \leq 0.002$), and pain ($p \leq 0.001$) than the children in the standard care group. There were no significant differences between the two intervention groups.

Limitations: No operational definition of coaching was provided. The following limitations were provided by the researchers: it was not clear what aspects of the intervention had impacted child, parent, and nurse distress levels; a narrow age range was used which decreases generalizability; the nurses were not blind to the condition and as a result, rater bias may have impacted results.

Strengths: All participants were videotaped and coded for qualitative behavioural data. All measures of distress coping behaviour and pain were reliable. Two nurses delivered consistent coaching to participants. Researchers did use multiple measures to reduce rater bias.

Recommendations: It is recommended that an operational definition of coaching be provided; including a wider age range would increase generalizability; including a rater who is not associated to the project may help reduce rater bias.

Jay, S.M., Elliott, C.H., Ozolins, M., Olson, R.A., & Pruitt, S.D. (1985). Behavioral management of children's distress during painful medical procedures. Behavior Research and Therapy, 23(5), 513-520.

Purpose: To assess the effectiveness of a psychological intervention to decrease distress of pediatric cancer patients during bone-marrow aspirations and lumbar punctures.

Operational Definition of Coaching: Coaching instruction by a psychologist took place 45 minutes before the procedure. Parents were then encouraged to coach the participant during the procedure along with the psychologist. The coaching sessions were used to distract patients, teach relaxation breathing and emotive imagery.

Sample: Five pediatric cancer patients between the ages of 3.5-7 years who were referred for severe anxiety and distress before a bone-marrow aspiration and/or lumbar puncture procedures.

Design/Methodology: A multiple-staggered baseline design was employed. Participants were referred to the study because of severe distress and/or anxiety before a painful procedure. The five children receiving the coaching intervention initially spent 45 minutes with the psychologist. Techniques used to decrease

distress were taught to both the participant and their parent(s). During the treatment, parents were encouraged to coach his/her child along with the psychologist. Two observers made recordings on the Observation Scale of Behavioral Distress in 15-second intervals.

Findings: Participants demonstrated a decrease in distress (73.3 to 36.3; $p < 0.01$) after the coaching training sessions. Also, intervention effects continued on subsequent sessions for all but one participant.

Limitations: As noted by the researchers, observer bias may have influenced the results. Both observers were aware that the psychologists were in the room coaching the participant. It is not indicated who the observers were and what training he/she received. It is also unclear how many psychologists were used for this study and what training they received, which reduces replicability. According to the study, distress levels of participants in subsequent treatment sessions decreased. How many sessions were observed is not provided, nor is the number of sessions the psychologist continued to attend. This lack of information questions the credibility of the results. Given that the psychologist was in the treatment room, participants may have felt obligated to appear in less distress, also known as the Hawthorne effect (Neutens & Rubinson, 2001).

Strengths: References were provided for each distress reducing method; this allows other researchers to investigate and potentially replicate those methods.

Recommendations: Interviewing participants after the intervention would increase understanding of his/her perspective; providing detailed information on the observers and psychologists and the training they received would increase replicability; documenting the number of treatment sessions the psychologist coached during and how many treatment sessions were observed by each observer would also increase replicability.

Manne, S.L., Bakeman, R., Jacobsen, P.B., Gorfinkle, K., & Redd, W.H. (1994). An analysis of a behavioural intervention for children undergoing venipuncture. Health Psychology, 13(6), 556-566.

Purpose: There were three main objectives to this study. The first objective deals with the intervention itself: When nurse coaches are instructed to coach only the parents of children receiving venipuncture do they coach the child as well?; When parents are coached on how to assist their child through the venipuncture procedure, do they follow what they have been taught?; Does the coaching help decrease behavioural stress in children receiving this procedure? The second objective examines the role of the parent as coach and whether they are able to increase the use of a “blower” to decrease distress in his/her child. The third objective explores child characteristics that may influence whether the child accepts the intervention strategy.

Operational Definition of Coaching: Nurses were then trained in a 1-hr training session on how to properly coach parents while their child received venipuncture. A manual of basic behavioural principles was provided to each nurse (Manne, Redd, Jacobsen, Gorfinkle, Schorr & Rapkin, 1990).

Sample: Thirty-six children with cancer and his/her parents (19 boys and 16 girls, aged 36-107 months old), and eight nurses trained in phlebotomy.

Design/Methodology: Parents and his/her child were randomly assigned to a treatment or control group. The treatment group received nurses who coached parents to encourage his/her child to use a party blower and to verbally help them through the procedure. The control group did not have nurse coaches aiding parents. The treatment group was videotaped as his/her child received the procedures and was coached by their parent(s). Two undergraduate observers who received four months worth of training then coded the videotapes.

Findings: Nurses were instructed to only coach the parent(s), but most (15 of 18) nurses coached the child in both the intervention and control group. In the control group, nurses even coached parents (5 of 17 parents). Parents did apply what they were taught by the clinical psychologist. Many of the children did end up using the blower (83%). Overall, it was determined that children who used the intervention

more, cried less, children responded more to the parent coaching rather than the nurse coaching, and younger children (ages 3 and 4) cried more with increased coaching by parents.

Limitations: The nurses coached both the intervention and control group. Therefore, observations made between groups cannot be compared. Very little information regarding recruitment was provided which limits the possibility of replicating the study. The reason why both parents and child were coached before the procedure is unclear and may have affected results. Because these children require venipuncture on a regular basis, their distress level may be affected by them getting used to the procedure known as a testing effect which impacts internal validity (Cook & Campbell, 1979).

Strengths: Substantial information is provided regarding the subject participants, which increases replicability and increases generalizability. Training information for both nurses and parents was provided with additional references available for further contact. The procedure sessions were videotaped and coded individually by two trained undergraduate students to increase objectivity as described by Guba and Lincoln (1985). Nurses were tested before coaching to determine whether they understood the instructions provided. Recommendations were provided.

Recommendations: Isolating the party blower and coaching would help determine which had the greater effect on patient distress; providing detailed information on recruitment procedures to increase replicability; removing children from the coaching training sessions before the procedure to reduce confounding variables; increasing confirmation that the nurses know what to do and not to do when the procedure is taking place to help eliminate lack of differences between groups; using a larger sample to manipulate the amount of coaching used by parents to determine whether there is a dose response gradient; it is recommended that researchers assess the nurses and parents perceptions of the coaching to see how it could be improved to minimize distress.

Pringle, B., Hillel, L., Gelfand, K., Dahlquist, L. M., Switkin, M., Diver, T., Sulc, W., & Eskenazi, A. (2001). Decreasing child distress during needle sticks and maintaining treatment gains over time. Journal of Clinical Psychology in Medical Settings, 8(2), 119-130.

Purpose: To examine the effects of child distraction therapy and parent coach training on reducing behavioural distress in children receiving needle injections or venipunctures for hematological or oncological diseases.

Operational Definition of Coaching: Seven psychology graduate students provided supportive coach training. Training involved teaching parents supportive coaching behaviours to calm their children during needle injections or venipunctures. No operational definition of coaching was provided.

Sample: Eight children between the ages of 3 and 7 and their parents. Children were hematology/oncology patients who were identified as being distressed during needle injections or venipunctures.

Design/Methodology: The intervention included distraction therapy for children and training in supportive coaching for parents. Treatment consisted of four graduated stages, during which the parent became more active as the child's coach and the therapist decreased his or her involvement. During stage one, parents were taught how to use specific praise statements when the child used the distraction (a hand held video game). During stage two, parents were taught to make behaviour-specific verbal and physical prompts to encourage the child to use the distraction. The therapist also maintained the parent's delivery of praise for the child's appropriate behaviour. During stage three, the therapist facilitated the maintenance of praise but slowly decreased his or her involvement. During stage four, the therapist observed the needle injection and consulted the parent afterwards.

Findings: Four children reduced their levels of anticipatory distress. Five children exhibited significantly less distress after treatment when compared to baseline measures ($p \leq 0.05$). Treatment gains were maintained at follow-up for three children.

Limitations: Not all families received the intervention at the same location. Half the families received the intervention at home and half received the intervention at the hematology-oncology clinic. Different locations may have contributed to different levels of distress experienced by the children. All the families moved at different rates through the four stages and received different amounts of sessions. There was no control group to compare results. Maintenance results were only available for three of the 8 participants. One family was Spanish speaking and had the intervention delivered in Spanish. The Spanish intervention may not have been the same and cultural differences may have influenced distress levels.

Strengths: Child, nurse, and parent distress was measured using valid and reliable instruments. Detailed screening procedures were used to allow individuals to participate in the study which increases replicability.

Recommendations: It is recommended only one treatment centre be used with all families to reduce a confounding variable that may have impacted results. A control group would provide a comparison. The intervention should be delivered in one language to maintain consistency.

The following seven studies provide great insight into the impact of life coaching on decreased distress levels in children receiving immunization, venipuncture/bone-marrow aspirations and lumbar punctures. All studies reported a decrease in distress levels. However, further research is recommended that includes clear operational definitions of coaching and consistent condition for the treatment participants, including equal number of coaching sessions.

Labour

The following section examined coaching as a technique to aid in the labour process. Only one study met the inclusion criteria for this project and examined coached and uncoached pushing on obstetrical outcomes during labour.

Bloom, S. L., Casey, B. M., Schaffer, J. I., McIntire, D. D., & Leveno, K. J. (2006). A randomized trial of coached versus uncoached maternal pushing during the second stage of labor. American Journal of Obstetrics and Gynecology, 194, 10-13.

Purpose: To compare coached and uncoached pushing on obstetrical outcomes during the second stage of labour.

Operational Definition of Coaching: Coaches were certified midwives that attended training sessions to ensure compliance with the study protocol. The coaching protocol consisted of: 1) positioning the head of the bed; 2) positioning the patient; 3) coaching the patient to pull back on both knees and tuck-in the chin while the partner supports the legs; and 4) coaching the patient on breathing techniques during contractions.

Sample: Three hundred and twenty previously consented nulliparous women with uncomplicated labours and without epidural analgesic who entered the second stage of labour.

Design/Methodology: Women were randomly assigned to coached or uncoached “pushing” groups. Participants in the coaching arm of the study received standardized closed glottis pushing instructions by certified midwives. These women also received encouragement to use proper ventilation techniques between contractions. Women in the uncoached pushing arm were supervised by midwives but did not receive specific instructions. These women were told, “to do what comes naturally.”

Findings: The second stage of labour was significantly abbreviated by approximately 13 minutes in the coached group ($p = 0.01$).

Limitations: No information was provided whether partners provided any coaching during labour. Women were not asked whether they had received any previous labour training which may have affected the results.

Strengths: Thorough protocols ensured consistent interventions for both coached and uncoached women reducing threats to internal validity.

Recommendations: It is recommended that detailed information be provided on whether partners were coaching the participants, as well as information on previous labour training each woman may have received. This information could impact results and would increase replicability.

The following study demonstrated that coaching pregnant women during the second stage of labour is associated with abbreviated labour time. Although this study does not utilize what many coaches would refer to as “life coaching”, it does provide a starting point for future research assessing life coaching’s impact on pregnancy and labour.

Obesity

The purpose of the following section was to assess the impact of life coaching as a treatment for individuals with obesity. An individual is considered *obese* when his/her body mass index (BMI) is greater than or equal to 30 kg/m². One study met the inclusion criteria for this section.

Newnham-Kanas, C., Irwin, J.D. Morrow, D. (2007). Co-active life coaching as a treatment for adults with obesity, International Journal of Evidence Based Coaching and Mentoring, Vol 6 No 2 pp. 1 – 12.

Purpose: To assess the impact of Co-active Coaching on the body composition, self-esteem, self-efficacy, physical activity, and functional health status of adults with obesity [body mass index (BMI) values greater than 30].

Operational Definition of Coaching: Life coaching for the purpose of this study was used as a process through which a qualified ‘coach’ mentors clients toward achieving their goals. A reference was provided for further review of the Co-Active coaching model (Whitworth, Kimsey-House, & Sandahl, 1998).

Sample: A total of 20 men and women aged 35-55, with a BMI \geq 30 participated in the study.

Design/Methodology: This one-group, pre-test post-test study targeted a sample of 20 men and women aged 35-55 who had a BMI equal to or greater than 30. Participants engaged in seven 35-minute telephone sessions with a Certified Profession Co-active Coach (CPCC). During these sessions, the participant called the CPCC and together they explored what changes the subject wanted to make in his/her life, and how to make the desired changes reality. A research assistant recorded height and weight measurements to calculate BMI, and administered the Short Form 36-item Functional Health Status Scale, the adapted Godin Leisure Time Activity questionnaire, the International Physical Activity questionnaire and the Rosenberg Self-Esteem Scale at baseline, at the end of the 7-week program. Paired t-tests were used to analyze the data.

Findings: Significant decreases in waist circumference ($p = 0.032$) and increases in self-esteem ($p = 0.01$) and functional health status ($p = 0.01$) were found. Qualitatively, participants reported an increase in daily physical activity and healthier dietary choices, feelings of optimism, and greater self-acceptance.

Limitations: A small sample size was used and the sample was predominantly women which reduces generalizability. The short duration of the treatment may not have been long enough to observe hypothesized results. Not all the participants received the same number of coaching sessions due to missed appointments and scheduling conflicts. Different number of coaching session may have been a confounding variable that impacted results. A control group was not used which reduces the ability to determine whether the treatment was associated with the observed changes.

Strengths: Detailed information was provided regarding recruitment and design. An operational definition was provided with a reference for future researchers to use in similar studies. Measures and interview questions were provided to increase replicability. Qualitative and quantitative measures were

used which increases the amount of information to accurately understand the impact of life coaching as a treatment for obesity.

Recommendations: It is recommended that a control group be used to determine whether the treatment was associated with the observed changes; increasing the number of coaching sessions may provide time for hypothesized changes to take place; standardizing the number of coaching sessions would eliminate a confounding variable that may have impacted results.

This is the first study to examine Co-Active life coaching as a treatment for obesity. Future research is still needed to examine the relationship of life coaching and obesity that includes a sample with an equal number of males and females, a control group and increased coaching sessions.

Postoperative Pain

The purpose of this section was to assess the effectiveness of nurse coaching in reducing pain and decreasing the frequency of side effects postoperatively. The following two studies are related and used children as their sample population.

Sutters, K. A., Miaskowski, C., Holdridge-Zeuner, D., Waite, S., Paul, S. M., Savedra, M., & Lanier, B. (2004). A randomized clinical trial of the effectiveness of a scheduled oral analgesic dosing regimen for the management of postoperative pain in children following tonsillectomy. Pain, 110(1-2), 49-55.

Purpose: To compare the effects of around the clock dosing of acetaminophen with codeine, with or without nurse coaching, and standard care with as needed dosing on reducing pain intensity, increasing pain relief, and increasing analgesic consumption.

Operational Definition of Coaching: The research nurse provided the nurse coaching. The coaching consisted of an evaluation of the child's condition, review of pain intensity, verification that the child was taking the medication, re-education of the rationale of the around the clock dosing, review of strategies to give the medication to the child, and re-education about potential side effects associated with the medication. No other coaching information was provided.

Sample: Eighty-one children between the ages of 6 and 15 undergoing a tonsillectomy and their parents.

Design/Methodology: Children were stratified by gender and then randomized into one of three groups. Standard care group participants received dosing every four hours as needed with standard post-operative instructions. Around the clock with nurse coaching participants received dosing every 4 hours, post-operative instructions, and nurse coaching. Around the clock without nurse coaching participants received dosing every 4 hours and post-operative instructions. The research nurse made follow up telephone calls to all parents on days 1 and 2 after the operation to evaluate adherence to dosing. Parents in the coaching arm received coaching during the phone calls.

Findings: Significant decreases in pain intensity scores during rest ($p < 0.0001$) and swallowing ($p < 0.0001$) times occurred in all three groups. No significant differences were found in the amount of analgesic administered between around the clock groups with or without coaching. No significant differences were found in the amount of nausea and vomiting among the three groups. Nurse coaching did not increase parents' adherence with around the clock dosing schedule.

Limitations: Coaching sessions were not the same length of time for each participant which may have impacted results. An operational definition of coaching was not provided.

Strengths: A detailed recruitment procedure was used to obtain participants. One nurse delivered the same information during all the coaching calls in order to maintain consistency.

Recommendations: It is recommended that coaching be the same length of time for each participant to maintain consistency and prevent length of coaching session from being a confounding variable. An operational definition would be useful to understand what actually took place during coaching sessions.

Sutters, K. A., Miaskowski, C., Holdridge-Zeuner, D., Waite, S., Paul, S. M., Savedra, M., & Lanier, B. (2005). Time-contingent dosing of an opioid analgesic after tonsillectomy does not increase moderate-to-severe side effects in children. Pain Management Nursing, 6(2), 49-57.

Purpose: To compare the effects of around the clock dosing of acetaminophen with codeine, with or without nurse coaching, and standard care with as needed dosing on increasing the frequency of moderate-to-sever opioid related side effects in the first 3 days after tonsillectomy.

Operational Definition of Coaching: The research nurse provided the nurse coaching. Coaching consisted of: a discussion of postoperative pain experiences of children after tonsillectomy; an explanation of the administration of a nonopioid with an opioid analgesic; a review of the ordered dose and around-the-clock dosing; strategies for improving analgesic consumption adherence; a discussion of possible side-effects; and an explanation about myths about psychological addiction. The nurse also evaluated the child's current condition, reviewed pain intensity scores, and verified that the child was taking the medication.

Sample: Eighty children between the ages of 6 and 15 undergoing a tonsillectomy and their parents.

Design/Methodology: Children were stratified by gender and then randomized into one of three groups. Standard care group participants received dosing every four hours as needed with standard post-operative instructions. Around the clock with nurse coaching participants received dosing every four hours, post-operative instructions, and nurse coaching. Around the clock without nurse coaching participants received dosing every four hours and post-operative instructions only. All parents received a booklet on when to administer acetaminophen with codeine. Each booklet had specific instructions for each of the two main dosing groups. All parents received a diary to track side effects. A research nurse contacted parents in the coaching arm of the around-the-clock dosing group. The research nurse made follow up telephone calls to all parents on days one and two after the operation to evaluate levels of adherence to dosing and review of the pain management booklet. Parents in the coaching arm received coaching during the phone calls.

Findings: No significant differences in around-the-clock dosing with or without coaching. Because there were no significant differences, the coaching and without coaching around-the-clock dosing groups were combined and evaluated against the as-needed dosing group. No differences in the frequency of moderate-to-severe side effects between the around-the-clock group and the as-needed group at any of the postoperative assessments.

Limitations: Home diary/side effects record had no previous reliability or validity and it is not clear whether they captured desired results accurately. Each coaching call did not have any specified time length which reduces replicability and may have impacted results.

Strengths: A detailed recruitment procedure was used to obtain participants which can be used by future researchers interested in conducting similar research. One nurse delivered the same information during all the coaching calls maintaining consistency.

Recommendations: It is recommended that previously validated and reliable instruments be used to measure effects. Including more information about the coaching intervention and using the same amount of time for each coaching session would increase replicability and control for confounding variables that may impact results.

One of the following studies did report significant decreases in pain intensity during rest and swallowing times postoperatively. However, no significant differences were also reported in both studies. Including validated instruments and consistent treatment procedures for each participant would increase methodological rigor. Future research is still needed to assess the relationship between life coaching and postoperative pain.

Self-Determination/Self-Efficacy

The purpose of the following section was to assess the effectiveness increasing self-determination using life coaching as an intervention. Two studies met the inclusion criteria for this section.

Powers, L.E., Turner, A., Ellison, R., Matuszewski, J., Wilson, R., Phillips, A., & Rein, C. (Oct-Dec 2001). A multi-component intervention to promote adolescent self-determination. Journal of Rehabilitation, 67(4), 13-19.

Purpose: To conduct an exploratory evaluation of the Take Charge program on adolescents with physical disability and ongoing health conditions.

Operational Definition of Coaching: Coaching was provided to participants by secondary special education teachers for 50-minutes each week for five months. Coaches provided assistance to participants in applying strategies of the TAKE CHARGE program (Matuszewski, & Powers, 1998), as well as establishing goals and carrying-out any activities necessary to accomplish those goals.

Sample: Twenty male and female (50% each) adolescents with physical disabilities and ongoing health conditions. Adolescents were between the ages of 12 and 18.

Design/Methodology: This study followed a two-independent group repeated measures randomized block design. Parents and adolescents were told that they would be assigned to the TAKE CHARGE program or a wait list group. The TAKE CHARGE program participants received individualized coaching, an adult mentor, monthly workshops, and parents were provided with a guide that described the Take Charge approach. Measures were administered pre and post-intervention. Personal adjustment, disability-related self-efficacy, adolescent empowerment were assessed using the Personal Adjustment and Role Skills Scale (PARS III), the Disability-Related Self-Efficacy Scale, and the Family Empowerment Scale respectively

Findings: Significant improvements in psychosocial adjustment ($p = 0.01$), empowerment ($p < 0.01$), and level of accomplishment ($p = 0.01$) were observed. Increases in disability-related self-efficacy were not shown.

Limitations: The researchers provided the following limitations: Because the sample size was small, this may have contributed to inequality of the groups by inadequate randomization of factors; there was a lack of standardization of some of the dependent measures which may have impacted results; further testing is required to ensure validity and internal consistency to ensure accurate results; the intervention was tested on adolescents with significant physical disabilities which may have impacted results and threatened internal validity due to statistical regression (Cook & Campbell, 1979); limited information on the coaching sessions was provided which reduces replicability. It would have been helpful to know how the coaches were trained and how the coaching took place to increase replicability.

Strengths: Participants were randomized into the treatment and control group which allows for a stronger association between the treatment and the reported outcome. The measures used were explained in great detail. The goal of the coaching was explained. References were provided for the model used to develop the TAKE CHARGE program, increasing replicability. Male and female adolescents participated in the study which helps increase generalizability. The researchers provided limitations. The wait list group could participate in the program during second semester.

Recommendations: It is recommended that the sample size increase to prevent inadequate randomization of factors and inequality of groups and increase the likelihood of securing matched groups for comparison; validating measures would increase rigor and strengthen internal validity; including adolescents with learning and emotional disabilities to increase generalizability; providing detailed information on how the coaching was administered would increase replicability.

Steinwedel, S. C. (2001). An evaluation of the effects of an individually tailored coaching intervention used with allied health students at Delaware Technical & Community College. Unpublished doctoral dissertation, Wilmington College.

Purpose: To evaluate the effects of a coaching intervention on the academic, general and social self-efficacy, and personal well being of Allied Health Students at Delaware Technical & Community College.

Operational Definition of Coaching: The Co-Active coaching model was used in this study (Whitworth, Kimsey-House, & Sandahl, 1998). In this coaching relationship, participants had the answers or could find the answers to their life questions and issues. Participants set their own agenda for the coaching alliance and coaches facilitated the process by helping participants stay focused on getting the desired results. The lead researcher conducted the coaching sessions for this study. Sessions were held for 30 minutes once per week for 16 weeks.

Sample: Thirty-six Allied Health Students.

Design/Methodology: Students joined one of three groups. The experimental group received 30-minute coaching sessions once per week for 16 weeks. At the beginning of the study, students filled out a student profile form and a pre-test questionnaire. During the last coaching session, participants filled out a post-test questionnaire. An additional survey was filled out by five participants, while five others were interviewed about their experiences in the coaching sessions. Participants in control group A filled out the pre-test questionnaire within the first two weeks of the study and the post-test questionnaire when the coaching sessions of the experimental group were completed. Participants in control group B only completed the post-test questionnaires. Participants in groups A and B did not receive any coaching.

Findings: Coaching did significantly improve the general self-efficacy subscales of the Allied Health Students ($p = 0.0083$). There were no significant differences between the three groups on social self-efficacy and well being. Interviewed treatment participants reported coaching to be an effective way to improve academic performance and personal lives.

Limitations: Students were not screened for prior participation in an academic or wellness program which may have impacted results. This study had no randomization as students selected which study group they wanted to join – this reduces the chances that the only difference between the groups would be if they received or did not receive the intervention. Not all coaching sessions were the same length of time and the number of coaching sessions each participant received varied. These variables may have impacted results.

Strengths: A strong coaching definition was used for this study which allows readers and future researchers to accurately understand what was intended with the coaching used.

Recommendations: It is recommended participants be randomized into different study groups and screened for prior attendance in self-development programs which increases the chances that the only difference between the groups would be if they received or did not receive the intervention. Coaching sessions that are consistent between participants would eliminate a potential confounding variable that could impact results.

The two studies presented above reported statistically significant improvements in self-esteem, psychosocial factors, and empowerment. Randomization and consistent coaching sessions across all treatment groups would be recommended to improve methodological rigor in future studies.

Discussion

The purpose of this annotated bibliography was to examine life coaching research that focused on health related outcomes. The studies presented above were critically appraised and contextualized with recommendations for future studies. Upon examination, predominant strengths and limitations were observed that could be highlighted and strengthened to offer additional methodological rigour to research in a growing field. These strengths and limitations are discussed below.

Many of the studies included in this project did not offer an operational definition of their specific coaching technique. This prominent limitation made it difficult to understand what was intended by the term “coaching”. Operational definitions serve to provide context so that researchers, other than the definer, independently can measure the term used. Because there are a number of coaching schools currently available with different definitions and models of life coaching, it is important to include information that will aid readers and fellow researchers in understanding the context in which a study took place. This is perhaps one of the most important findings of this analysis; the attribution of changes to health behaviours through ‘*coaching*’ must be precise and specific to the coaching intervention utilized in each and every study.

Randomization of participants into treatment and control groups was lacking within the majority of studies assessed. Control groups were also lacking. Although we recognize the difficulty in conducting research with control groups and randomization, these two factors play an important role in conducting rigorous methodological studies. Randomization increases the likelihood of securing matched groups for comparison (i.e. increasing the chances that the only difference between the groups would be if they received or did not receive the coaching intervention). Control groups also provide a comparison to the treatment group to help determine the strength of the association of the intervention to the observed changes.

In order to ensure that a published study is authentic research, information on methodological procedures must be integrated for other researchers to replicate. Detailed information sufficient for replication was not always provided within the studies examined herein. Such information should include: recruitment information; demographic information; inclusion/exclusion criteria; operational definitions; measures utilized; data collection; and procedures for analysis.

Maintaining consistency within treatment groups is essential in determining whether the observed changes were a result of the treatment. Many of the studies included in this project had participants receive different numbers of coaching sessions, as well as different lengths in coaching sessions. If one participant received five, 30-minute coaching sessions, while another participant received ten, 40-minute coaching sessions, those differences could impact results significantly. Confounding variables, such as the number and duration of coaching sessions, can play a role in the reliability and validity of a study’s outcome. By reducing the number of confounding variables, internal validity increases as well as the study’s rigour.

There are a variety of health areas that are producing a number of life coaching studies. Some of those areas include anxiety/emotional/stress issues, asthma, cancer, cardiovascular health, and diabetes. Given that research in those areas has escalated, it is recommended that researchers increase their generalizability by incorporating a variety of different participants (e.g. differences in age, sex, race etc.). Demonstrating the impact coaching has on a particular health issue with a variety of different participants, may predispose those cohorts toward seeking the aid of a life coach.

While we have focused on the limitations, it should be made clear that many studies did include elements – such as randomization and/or operational definitions – that strengthened the association between life coaching and a particular health issue.

This critical appraisal of extant research points the way for new applications of life coaching to the area of health behaviour enhancements and changes. With the rise in interest in and the severity of impact of such medical conditions as obesity, where allopathic treatments have failed to yield consistent, encouraging results, it becomes imperative to discover and document the positive benefits of alternative therapies, such as coaching that have yet to be standardized and affirmed. In spite of certain methodological inconsistencies, a great deal of ground-breaking and innovative research assessing the impact of life coaching on different health conditions has provided incontrovertible evidence that coaching is a valuable intervention within a broad range of health issues.

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