OPTIMAL EXPERIENCES AND EXERCISE ADHERENCE: THE ROLE OF FLOW AND MOTIVATION

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requirements for the degree of

The purposcofthis study was three·fold: (I) to determine iftherc was a relationship between nowexpcrienced by excrcise participants. motivation toexcrcise.and exercise adherence: (2) to what extent is now associated with exercise adherence; and (3) what are the difTerences(ifany) in flowexperiencedand motivation to exercise amongactivc vcrsus less active exercise participants. The study uscd a cross-scctional quantitativc survey design. A purposivesampling techniquewus uscd torecruitl00 individua)swho participated in various physical activity programs within St. John·s. L (M_{age} = 27.8; 80% female). Excrciseadhercncc wus measured using the Spons Physical Activity Index (Spons PA)ofthe Baecke Questionnaire ofHabitual1)hysicaI Activity. Predictor variables included flowexpericncedduringexercise panicipalion (Dispositional Flow Scalc-2) and motivation to exercise (Motives for Physical AClivities Measure-Revised) Results determined that flow did not have a slrong rclationship with physical activity adherence. Future research suggests examining other variablessuch ascfficacy for flow andgoal orientntions. As this study wasexploratory in nalure. itissuggcstedthat this study bc replicated and expanded to examine athletes in highly compelilivesiluatiolls

Menander(342-29IBC)oncesaidthat'·byassociatingwith wisepcoplc.you will become wise yourself. ,. I wouid like to extend my sincere thanks 10 the foilowing people who.withouttheirheip, lhisthesiscould nothavebeenpossible.ltirstandforemost would like IOlhank my supervisor. Dr. Angeia Loucks·Alkinsonforherguidance throughout the years. Dr. Loucks-Atkinson (aka Dr. Angela). I cannot express my gratitude enough to you. From my years as an undergraduate to a Masters student. you werc always thereto help me with whatever I needed help with. From wrilingliterature reviews to conducting statistical analyses, I could not have asked for a more knowledgeablcsupervisor. I will forever rcmember you as one of the most influential professors in my academic career. Secondly. I would like to thank Or. Basil Kavanagh for his knowlcdge and wisdom throughout the years. Dr. Kavanagh, yourdedicationand passion to leaching Sport Psychology helped me bettcr understand thc manY psychologicaltheories. Youhelpcdmcbetterundcrstandthe theories by encouraging me to apply expcrienccs of when I was a tcnnis player to comprehend thetheories. I canoniy hope that onc day I can be as knowledgeable as you in Sport Psychology!Lastly, (but certainly not least). I would like to thank my parents (Brenda and John), sister (Katie) and boyfriend (Mike) for their continued support throughout myacadcmiccareer.Mike. thank you for supporting me throughout my thesis. \Vhetherl had a computer problem or just needed to vent my frustrations. you were always there forme. To my parents. thank you for inslilling the concept of hard work in me at such a young age. I would not be

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Table 16 Descriptive Statistics and T-Tests ofAclive versus SedentaryExercise Participants in the Reponing ofMotivaiion

2. Sport PA= Sport Physical ACl ivity

Exercise adherence is one of the most highly researched and talked abouI phenomcnon's in exercise and heahh related literature alike. In fact.manyresearchers such as Dishman and McAuley. to name a few have conducted much research on the exercise adherence process and factoTS which inOuenceadherence. Exerciseadherence has a direct impact on our lives and our overall heahh as there are many heallhbenefits associated with physical exercise. While mosl pcople are cognizant of the bcnefilsof physical aetivily. auempting to get sedentary individuals to eommence exercising and active individuals to maintain exercising has proven to be problematic (Dishman. 1994) ObesityrateseontinuetoriseinCanada.withcwfoundlandrcportingthe highest levels In faci. with respect to Canada in 2008 as a whole. reports ofheight and weighlofI7.2% ofCanadians ages 18 and olderwerec1assifiied as obese (Statistics Canada,2009) Additionally. from 2003-2008, obesity among men and womcn increased from 16.0% to 18.3% and 14.5% to 16.2% respectively (Statistics Canada. 2009). Finally, in a study of overwcightindividuals,58.6%ofmenand43.S%ofwomenwcrcatan increased health risk due to their weight (Statistics Canada, 2009). AsobesityraIcS are a continuing problem in sociely, it is important to delennine why individuals live sedclltary lifestyles and explorc the corresponding motives towards exercise among physicallyaetive

There are many factors that can detennine one's participation in physicalactivityand adhercncc to a particular exercise rcgime. As motivational characteristics arc one oflhe crucial dctenninants in commencing or continuing a particuiaraciivity.thestateof flow

totally absorbed in what one is doing. to the exclusion ofall other thoughts and emotion (Jackson & Csikszentmihalyi. 1999). Although exercise adherence. motivationandflow have all beenstudicd extensively. there has yet to be a study that hasexamincdallthree variables and their relationships to one anolher. FurthemlOrc.many theories have been used to study exercise adherence such as the Transtheorelical Model and Protcetion Motivation theory; however. flow has not been one ofthem. It has been suggested that highlymotivatedindividua!sexperiencehighinslancesoftheflow state (Kowal & Fortier, 1999). Additionally. self-molivation was consistently found to have a positive association with physical activity. Dishman and Sallis (1994) and Grove and Lewis (1996) reported that participants involved in an exercise program (i.e. circuit training) did experience flow and that the flow states generally increased as the exercisewas prolonged. !-lowever, it is not known if a relationship exists among now.motivationand exercise adherence. Therefore, this study is unique in that it seeks to determine the relalionshipsbelweenexerciseadherence. flowandmotivation. Theobjecliveisto examine the possible instances of flow in the course ofexercise participationinaddition

examine these thrcc ractorsandtheir interrelationships in order loconcludcirinOuences

Spccifically.Jacksonetal. (l998)detennined that perceived ability had the most substantial correlations with Oowwith regards to swimming. triathlon. cycling and track and field. Furthennore.Csikszentmihalyi and Nakamura (1989) detennined that there isa need rorthechallengesand skills to be reasonably high priorloexpcriencingaOow.like cxpcrience. Thererore. athletcswho have confidence in Iheirabilities should be expected to experience a chaJlenge/skillsbalance. although the challenge ora panicularactivity may be high (Jackson et aI., 1998). Bassi et al. (2003), in his study to investigatethe quality orcxpcrience and risk perception associated with high-altitude rock climbing. detenninedthatOowwasthe mostrrequcntly reponcdcxperienceamong the rock climhcrs and Grove and Lewis (1996) reponed that participants involvcd in circuit trainingdidexpcrience Oowand thaI the Oow statcsgencrally incrcased as Ihcexercise wasprolongcd.l-lowcvcr, thcrcislimilcdrcscarch examining theefTecl orthestateor nowon adhering 10 a particular excrcise regime. Thisslldy will allCllpt to uncovcrthis area as I believcthatone's motivcsand psychological slntc isdirccllly rclalcd to our

The following chapter will discuss various factors of motivation and its corresponding attributes, a range of theories of exercise adhcrence and adescriplion of thc thcory of flow. A review of the literature of the previously mentioned factors is then provided. Finally.therelationshipsamongstthesefactorswill bcdiscussed

Adhcring to an exercise program poses many dilemmas in Icmlsofdeveloping a heaithylifestyle. ln fact.researchhasdetermincdthatapproximatelyhalfofthe participantswhoenrollinasupervisedexerciseprogramwithdrawwithin6months (Dishman, 1988). Reasons cited for the disconlinuation ofcxcrcise incilide injury, lack of direction, unrealistic goals, inability to slowly progrcsswithin an exercise program, lack of professional guidance, lack of support (Downs & Hassenblas, 2005), andllnrcal expectations with regards to weight loss (SlIlIivan, 1998). Thcre are nllmerOlls factors of

personal attribllltcs, environmental factors and physical aClivity characteristics (Dishman, 1990). With regards to physical activitycharacleristics. Dishman and Sallis (1994) discovered that self-motivation, prior program participation. and social support from spouse and family were consistently documented as having a posilive associalion with physical activily. On theconlrary. perccivcd lack of time and perccivcdefTort demonstrated a negative association with physical activily. Many of Ihe above reasons for

is Jikely to be present in situations lhat pcnnit satisfaction of the needs for autonomy and competence. These types of circumstances are characterized as being informational (Deci elal., 1980). Although pcrceived compctence is essential for motivation. perceived autonomy is compuJsory for intrinsic motivation (Deci & Ryan, 2000)

There have been many studies that have showed lhe relationship between intrinsic motivation and competence. For instance, research has supported the concept that autonomy is essential to intrinsic motivation by showing that other events such as threats (Deci & Cascio, 1972), surveiJlance (Leppcr & Greene, 1975), evaJuation (l-Iarackiewicz et aJ., 1984), and deadlines (Amabile et al., 1976) led to a decrease in intrinsic motivation (Deci & Ryan, 2000). In conlrast, providing choice (Zuckerman et aI., 1978) and acknowledging people's inner experience (Koestner et aI., 1984) augments intrinsic motivation and increases peopJe's confidence in the pcrformance in their activities (Tafarodie taJ., 1999). The folJowing section wiIJ discllss another form of motivation

Extrinsic motivation is anothcr important type of molivation as it is difficult to find an activity that is purely intrinsic. Extrinsic motivation is defined as behaviours that are considered a means to an end (Deci et aI., 2000). SimiJarly, it refers to the perfonnance of an activity in order to attain some separable outcome (Deci & Ryan. 2000). The primary

goal for extrinsic motivation isto gain awards and avoid punishment.Extrinsic motivation has been classified into two different typesofmotivation:self·detemlined extrinsic motivation, which is when an individual engages inaparticular activity dlleto personal choice, and non·self-delennined extrinsic motivation, which is present when an individllalplacespressureonthemselvesinordertoperformanactivity or when they believe their behaviours are controlled by various external factors(Kowal & Fortier,

Various theories have been used to predict and explain exercise adherence Additionally, many of these theories contain the construct ofmotivation.Theoriessuchas the Transtheoretical ModeL Theory of Reasoned Action and Theory 0 fPlanned Behaviour, Protection Motivation Theory, Social Cognitive Theory. Reversal Theory and theSelf.OeterminationTheory haveallbeenresearchedin conjunction withexercise adherence. The following section will therefore discuss these theoriesandtheir

TheTranslheoreticaIModel(Prochaska&DiClemente,1983)suggests Ihat the relative strength of intrinsic or extrinsic motives to exercise has been found to change acrossmanystages:thepreparation stage(individualisconsideringexerciseas a potential activity), tbeaction stage (exercise has been performcd for less than 6 months) andthe maintenancestage(exercisehasbeenperfonnedformore than 6 months)

(Prochaskactal.. 1983). lnlhe preparation andaction stages.cxtrinsic motivesappcar to bc stronger whereas in the maintenance stage. intrinsic motives are moreprominenl (IngledewetaI..1998).Peoplewhobegintoexcrcisebascdonextrinsicmotivationsare less likely to continue with the particu)aractivity ifthis remains Ihe sole mOlivator(Ryan etal..1997; WankcLI993).Althoughextrinsicmolivesarcessentialwhen one is dcciding whelheror not to partake in a particular exercise regime. intrinsicmotivcsare

Thco'1' ofReasoned Action and Theory of Planned **Behaviour**

According to IheTheoryofReasoned Action (Ajzencl al.. 1980: Fishbein et al.. 1975). what one's intentions are (or are not). olherwisc known as behaviouralintcntions. arc one of the primary causes of behaviour. An individual"sbehaviouralintentiollsare thereby inOucnced by their attitudes of the particular behaviour andthcir evalualionof other people's opinions. It is important to consider these factors as they can be important predictors of behaviour (Trafimow, 2009). Much oftbis theory consists of various types ofsalientbclicfswhicharedcfinedasbeliefswhicharcfirstthollght ofllponbeingasked an opcn-ended question (Sutton et al.. 2003). Salient behavioural beliefs (attitudes with regards to the potenlial consequences when pcrforming the behaviollr) prcdictonc's

significant others) aid in determining theirviewpoinls of important individuals and their motivationlocomplywiththeirideals(SultonctaI..2003). lnaddition. salient control

paintings in theircompletcd fonn were not expected togeneratc mueh, ifany, revenuc nor were rewards present. Thercfore. why did thc painters exert so llluehcffortintotheir paintings ifthey would receive next to nothing in retum? What was motivating thcse painters to paint? These questions plagued Csikszentmihalyi ashe fclt that all human behaviours happened fora reason; no matter how eomplex thesc bchaviursmightbc (Csikszentmihalyi&Csikszentmihalyi, 1988)

Despitemuchofsoeietal research atthctimebeingdireetcdtowardsthe cxplanationofbehaviourintemlsofrcwardsorextcmalvalucs, Abraham Maslow, a highly acclaimed Ameriean Psychologist known for hisdevelopmentofthcHierarehyof Human Needs,appearedtohave madeabrcakthrough tothismystcry. Maslow'sresearch playcdon much ofthe highly acclaimed condition of intrinsic sitllations(self-rewarding)

limitations through intense activity and experience. Altholl gb thisprovidcd great insight into why the paintcrscxperienced so muehenjoyment from painting, many questions were still left llnanswered:(I) Doall aetivitiescontainan intrinsic component?: and (2) Is everyonc capable ofexpericncing intrinsic motivation? While these questions arc ambigllousinnature.itisdcarthatindividllalscreateenjoymentinandoftbeactivity

foundationofthedevelopmentofatheory, knownasllow(Csikszentmihalyi&

challenges), which are matched with the person's own capacities toacl(or skills)" (Csikszentmihalyi&LeFevre. 1989, p. 2).ConsequentlY, lhecomplctc opposite can occur. If your skills are greater than the task at hand, boredom is likely to occUf whereas ifthetaskathandexceedsyoUfskillsorcapabilitics, anxictyislikelytooccur. lnboth of these cases, performance isexpcclcd to decrease (Weinberg & Gould.2003) Spccifically, individuals should partake in aClivities that are best suited to lheir own capabilities. For example, if a beginner chess player (i.e., low skill) is placed ina

expcrienceanxiety.Incontrast, ifanavidmolintainclimber(i.e., high skill) climbs a mountain with minimal challenges in terms of incline and terrain (i.e., low challenge) he or shcmayexpcrienceborcdom. However, ifanindividualparticipates in an activity with challenges that match hisor her skill level (e.g., beginnerchessplaycrparticipating in a beginner tournament or avid mountain climber climbing Mounl Evercst), the expcrienceis more likclytofacilitatetheexperienceofnow(i.e.anoptimalexpericnce) Additionally,ifapersonhasjuststarted toplay tennis, ideally the first goal istolcarn how to hold on to a racquet. As their skills becomc more developed and they have

move on. Consequently, attempting to hit the ball over the net isa logical progrcssion However, ifonedoes not know how to hold on to a racquet propcrlyand attemptsto hit the ball over the net, anxiety or frustration is likely to occllras thereisanimbalanccof

likely to occur. Moneta and Csikszentmihalyi (1996) state that thctheoryofflow

aClivityandor person-environmentinteractionneedtobeconsidered. There are many characteristics consistent with Ihe theory or flow. Thesecharacteristics includc 1)A bulance of Challenge und Skills, 2) Complete Absorption in the Activity, 3)ALossof se1f·Consciousness. 4) Clear Goals and Unambiguous Fcedback, 5) Concentration on the Taskut Hand. 6) SenscofControl, 7) MergingofAclion and Awareness.8) Autolelic experience and 9) Transfonnalion of Time and Effortless Movcment. Speeifically, these

activity. The following section will discuss these charactcristics

participation. anythingextemal to Iheactivity does not seem to matter and is considered irrelevant, complele absorption isapparenl. This is known as *CompleteAbsorplionill Ihe* AClivily.Specifically, thcindividualiscompletelyabsorbcdin lheactivityand isonly concemed with Ihepresenl componenls of the activity itself. For example, an individual who is playing violin at a concert may become so absorbed in the activitythat lheyare unaware of the audience to tbe point of being surpriscd when theaudience applauds at tbe endoftbemusical piece. Additionally, tbe individual whohasjust learned to play tennis may enjoy the game so much tbat thcy are oblivious to the ncarby noiseofconstruction

or other sounds due to this complete involvement. Thischaracterislic is important for

without the fear of any distractions. Consequently, it is lhese activities that produce immense amounls of enjoyment (Weinberg & Gould, 2003)

During the activily, concern for lhe se1fdisappears during flowas the person becomes one with theactivily. This is known as the *Losso/SeIfConsciousness* Specifically, there is nodifTerentiation belween the person partieipaling in the aClivity or the activity itself. The absence of preoccupation with the selfdoes nol mean tbe individual is unaware of what is happening in their mind or body. butratherthe individual is not focusing on the informalion normally used to represent to oneself who one is (Jackson & Marsh, 1996); the individual is merely concerned with the activity thcy are participating in. For example, the tennis player may becomesoimmersedin lhe activity that they feel as though their racquet has become an extensionoftheirownbody Thischaractcristic is important forexerciseadherencc in that participatinginanactivity

whole newjoumey of self-discovery as we become immersed in this deep psychological condition(Csikszentmihalyi, 1990),Throughthisinvolvement,wearecapableof reaching needed depths as we discover ourselves further

While participating in activities, individuals develop such asenseofcontrol that they are not actively aware of control (not thinking about lhecontrolpresentorlackof conlrol) nor are they concemed wilhlackingcontrol. This is known *asSenseo/Conlro!*

The thoughl ofaccompl ishmentorfai lureisnotpresent andindi vidualsaremerely concernedwiththeparticipationintheaClivity.Asenseofexercising control is experienced, without the person activeiy trying to exert control (Jackson&Marsh, 1996) For example, the tennis piayer is not concerned with their opponentbutratherisjusl focused on hiningthe ball in the desired spol. Thischaracterislic is important for exercise

merely enjoying participation. It is the abiiity to develop a sense ofcontrol in activities thatislikelytoresultinsuperiorperformancesandpermilindividualsto believe that they

Whilecomplctelyabsorbedintheactivity.theindividualisaware oftheir own

Awareness. Involvement becomes so deep that it becomes spontaneous or automatic (Jackson & Marsh, 1996). It isa type of subconscious feeling that if it is made conscious can disrupt the experience as thoughts become diverted away from the task at hand. For example, whenthe tennisplayerisplayingtennis,theydonotneed loconsciouslythink about how to hit the ball as it appears to be a natural process. Thischaracleristicis important for exercise adherence in that individuals are not preoccupiedwith their technique or form in an aClivity and are merely participating. It is at this point where the absorption is so prominent that actions in the activity appear to be spontaneous and they no longer view themselves as separate from the actions they are performing (Csikszentmihalyi, 1990;Weinberg&Gould, 2003)

in the amount of time spent in the activity. This is known as *Transformalion of Time and*

for two hours when in facl they were only scheduled to play for an hour. This

longer in an activity as opposed to watching the clock for the time pass by

Completcconcentration is critical while experiencing flow. This is known as

irrelevanttothe task isnotprocessed, leavingonlyinformation relevant to the task at handtobeaddresscd. ConsequentlY, totalconcentrationisoneofthemostfrequently

is especially important in order to effectively complete an activity. Forexample, the

lheactivity, such as the speclators. Thischaracterislic is important for exercise adherence in that it permits the individual to fully focusontheaclivity inwhich they are participating and to dismiss everything exlemal to it. It isthe strllcture that this

they possess particular traits. Specifically, the autotelic experience(or personality)

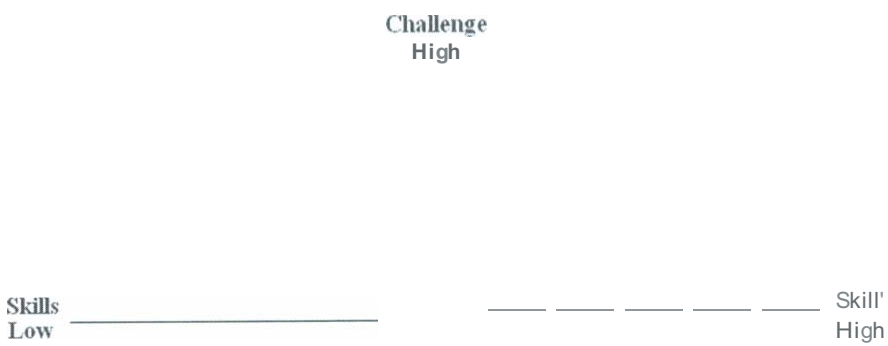
consists ofa group of traits which are thought 10 facilitate intrinsic molivationin particular activities. Additionally, the autotelic lrait encompasses concentration abilities, autonomy, self-confidence, an internal locus on control, a focus on process and challenge

autotelic trait also tend to be internally driven and tberefore participate in activities for intrinsic reasons. Additionally, individuals wbo possess the autotelic trait may be more likely to remain involved in exercise due to their intrinsic motivation

As previously discussed during the Ilow experience, the person perceives a balance between the challenges ofa situation and one's skills, with both constructs operating at a personally high level (Jackson & Marsh, 1996). This is known as *Challenge-Skill Balance*. Csikszenlmihalyi and Csikszentmihalyi (1988) describe this characteristic as occurring when a person's skill is at just the right level to cope with the situational demands. Conscquently, individuals who do nOI possess the appropriate skills for the activity chosen will likely deem the activity meaningless and when an individual's skill level surpasses the activity that they are engaged in, their selfand their potential cannot be realized. Additionally, this is also true when the characteristicsofan activity surpass the individual's skill level. To clarify, one can assume that there are challenge-skili quadrants(See Figure 1). Thevertical line representschallengesand the horizontal line represents skills. The top right quadrant represents the Ilow state. the top left

quadrant represents anxiety. the bottom right quadrant rcprescnts borcdom and the botlomleftquadrantrepresentsapathy. lnactivitieswhcrcthechallcnge orthe activity is high and so are Ihc skills or the individual. we experiencc a sensc orwell·being such as tlow. Kecping in line with Ihe previous example. Ict us assume thai an individual has just Icamed how to hit Ihe tennis ball over the net. After practicing this skill a rewtimes. he or shemayprogresstoauemptingtohiltheballo\'erthenclfivctimesinarow and so on. Sincethisactivityiscomparablewithhjsorherskilllevcl.thcindividual is likely to experienccflow. ln activitieswherethechallengeortheactivilyishighandlheskillsor the individual are low. anxiety is likely to occur. Evcn though the individual has just learned 10 hit the ball overlhe net. anemptingto putdifTercnt kindsorspinson the ball may be quite difficult ror the player and the individual would likcly becomerrustrated and expcrience anxicty. in activities where the challenge orthc activityis low and the skillsarehigh,borcdom islikclytooccur.Sinccthctcnnisplayerhas Icamed to hit the ball ovcrthc net. Icaming how to hold on toa racquctagain would bc boring since they havcalready mastered that task. Additionally, in situations where neither skills nor challcngesareprcscnttoasignificantlevel,areelingor lowcnergy Icvcls and apathy is likcly present and flow is not expected to occur (Jackson & Csikszcntmihalyi,1999.p 37). Thischaracteristicisimportantror exerciseadhcrencein that the challenge orthe activity in which an individual is participating in must corrcspondwiththeskillieveIthe individualpossessesinorderroratlowexpericncetooccur.ltiswhcnthe balance or challengcsandskillsareatanequilibriumthatindividualsarehappicstand tlow experiencesareimminent(Csikszemmihaiyi. l990:Wcinbcrg&Gould. 2003).l-Iowever.

although a low challenge and low skill situation can create a nowexperience, a true flow-likeexperienceisevidenlwhentbereisamatch belweenhighchallengeand highskill involved. Thischaracterislic can be applied to exercise adherence in thaI indi viduals may adhere more to exercise when they expericnce now during thcse activities, andnow is more likely to occur in activities which meet individuals currentskilllevel



(Figure adapted from Weinberg & Gould, 2003 reprintcd from Kimiecik & Stein, 1992)

charactcristiccanocappliedtoexerciseadherencein thalindividualsfrequcnllycstablish

1996). Therefore, it is critical to develop a type of analysis which can accurately llleasure llowanditsattributes.Althoughllow isasubjectivestate.manystlldies have employed a quantitativemethodofmeasurementinordertoavoidlilllitations lhat are present during qualitativc rcsearch such as the relrospcctive nature of interviews (Karageorghisct aI., 2002). Among the lllost commonly usedquantitativc instrumenlsare the Expericnce Sampling Method (developed by Csikszentmihalyi. Larson. & Prescott, 1977; Csikszentmihalyi & Larson. 1987;1-lonnuth, 1986; Larson&Csikszentlllihalyi.1983 (Csikszentmihalyi & LeFevre, 1989), theFlowSlateScale(developedbyJaeksonand Marsh in 1996), the Privelte Experience Questionnaire (developedby Bundrick, Privette & Thornton in 1999) and the Dispositional Flow Scale (developed by Ford. Jackson,

TheExperienceSamplingMethod(Csikszentmihalyi, Larson & Prescott, 1977)is allleansforcollectinginformationaboutbolhthecontexiandconlent of the daily life of individuals (Csikszenlmihatyi etal.. 2007). In a study that employstheExperienee SamplingMethod, participantscarryan electronicpagerandExperienceSampling

Questionnaire booklet. Signals are sent to Ihe pagers al random timesthroughoultheday and participants are instrucled to immediately fill out a section 0 ftheq uestionnaire pertaining to the physical context, social context, activities and thoughts and feelings

This methodology has been used in several studies exploring the roIe of flow in sport (e.g., Fave&Massimini,2003; Danielsetal., 1995). For example, Danielsetal.. (1995) conducled a sludy 10 investigate the use of the Experience Sampling Method to measure now among students enrolled in basketball activities. Duringa nine week period, a research assistant would enter the gymnasium once a week andinlcrruplactivity todislributе the Experience Sampling Method questionnaires to participants. Upon completion of the questionnaires, participants rcsumed their activity.Resultsconcluded

students perceived thc flow context to be the most enjoyable

Addilionally, Bassi etaJ.,(2003)conductedasludytoinvestigatethequalityof experience and risk perception associated with high-altitude rock climbing by means of the Experience Sampling Method among six male rock climbers. Eachclimbercarriedan electronic pager that sent random signals five times a day for a wcek. Upon being signalcd,c1imberswereasked lo fill out a section ofthc Experience Sampling Mcthod questionnaire which asked questions such as "What were you doing?" and·'Please dcscribehowyoufeltwhenyouwerebeeped." Resultsconciudedthatciimbingprovided a potential source of flow and now-likestalcs. In fact, flow was the most frequently

reported expcrience among the rock climbers. Additionally, accordinglo the literature on the Experience Sampling Method literature by Csikszentmihalyi and Larson (1977), five signals a day for a standard one week session areefTective in portraying participants daily

The Flow State Scale provides a quantitative measurement of the eight dimensions of now outlined byCsikszentmihalyi (1990) in sport andphysical activily settings. The 36 item instrument fonnseight sub-scales which represent the dimensions of now. The dimensions measured include: I) Challenge-Skill Balance, 2) Merging of Action and Awareness 3) Clear Goals and Unambiguous Feedback, 4) Concenlrationon Taskal Hand, 5) Sense of Control, 6) Loss of Self-Consciousness, 7) Transfonnalionof Time and 8) Complete Absorption in the Activity. Statemenlswere developed based on the eight dimensions of now (e.g. "I was challenged, but I believedmyskillswould allow me to meet Ihe challenge"(Challenge-Skill Balance)) and respondents indicate the extent to which they agree with each statement on a 5-poinl Likert Scale (l="strongly disagree" and 5="stronglyagree"). According to Jackson and Marsh (1996),The Flow State Scale has received initial psychomctric support through confinnalory factor analyses, which confirmedthe hypothesized nine-factorstructure,Supportwasalsa demonstrated fora higher-order global factor; however the fit of the data was slightlybetterforthenine-

Addilionally, Jackson et al. (1998)conducled a study to examine possible psychological correlates of flow in a sample of398 athletespartaking ina World Masters Games open to all performers with no qualifying standards. Therefore, the skill level varied greatly as some participants were world-ranked competitors while others viewed themselves as recreational participants. The participanls forthis study were selected from four main sports: 1) swimming, 2) triathlon, 3) cycling and 4) track and field. In addition to using the Flow State Scale to assess the athleles, the Trait FlowScale, based on Jackson and Marsh's Flow State Scale which is designed to assess the trait component of flow, was used during this sludy. Specifically, the Trait Flow Scale assesses the frequencywilh which respondents report experiencing flow in general during sport participation. Results concluded thaI relationships exisl between flow and perceived sport ability, anxiety, and an intrinsic motivalion variable

peak performance, defined operationally as "functioning at your besI"(Bundrick et al.. 1999, p.5& Privette.1999).Thisquestionnairecontains 47descriptiveitems/questionsin a Likert-type format. In addition. the questionnaire was developed bascd on unstruclured self-reports and literature conceming peak experiencc, peak performanceandnow.Thc Privctte Experience Questionnaire has been used ill several stlldies examining the experience of flow. For example, Grove and Lewis (1996) conduclcd a sludy to examine

the hypnotic susceptibility and priorexperiencc as correlates 0 fflow·likestatesduring exercise by means ofthc Privette ExpericnceQucstionnaireamong96participantswho rcgularly attended circuit training classes at a universitygymnasiulll. A subset often itcms was derived from the Privette ExpericnceQuestionnaire inorder to assess the flow-like states. Participants completed thc ten item flowqucstionnaireontwodifferencnt occasions as they moved loothercxercises. Participants were then instructed to assess theirhcart rate each time they answered dimcnsions of the flow seale.Resultsconcluded thatflow-likestateswereapparcntduringcircliittraining.Psychometric studics (Privelte & Bundrick, 1987) supported reliability and construct validity and provided an

ThcDispositionalFlowScalemeasuresaparticular individual'sdispositional propensity to experience flow (Boric, 2005 & Jackson & Marsh, 1996). It consists of36 items based on the eight dimcnsions of flow cited byCsikszentmihalyi(1990)tomeasure the frequency in which individualsdistinglish experiences in flowinaparticularactivity The Dispositional Flow Scale is based on a previous validation 0 f Jackson andMarsh's (1996) Flow State Scale which measures flowexpericnces in a partieularactivity.ltcms on the Dispositional FlowScalcarebasedona5-point LikertScale varying from "I" (never) to "5" (always). An example ofa question assessing Challengc-SkillBalanceisas follows: "I am challenged but I belicve my skills will allow me to meet thechallenge "

Additionally, each subscale is measured by four items (Jackson etaLI998).Wanneret aI., (2006) conductcd a study to examine whether flowanddissociationwcreexpericnced across sports, recreational and palhological gambling in a sampIcof5 11collcgesludcIlls

concluded that describing flowisa relational performance which requires the use of

Flow and motivation have long been sludied together. As both are crucial

participants versus sedentary participants

Transformalion of Time were less sensitivc to dilTerenl typesofsiluationalmotivation (motivation levels reported during a specific siluation) in comparison to the other flow characteristics most likcly duc to the indislinclness (or comprehension difficultics) of lhe

Rcscarchindicatcs that individualsoften expcricnce flowwhileparticipaling in sport and physical recreational activities. Theexpcrience of flow has been found to be present in several sport and physical recreation contexts including netball (Fryer etal.. 2002). swimming (Forticr&Kowal. 1999),basketball(Danielsel al.. 1995). climbing (Bassi et al., 2oo3).circuiltraining(Grovc&Lewis.1 996),sportsat the World Masters Games(Ford etaL,1 998) andcanoeing(Sparkcs &Partington.2003). For example. Ford ct al.,(1998)concludedthalperccivedsport abil ity hadthc most substanlial correlatiolls wilh flow. Moreover. Bassi etal, (2003) concludedthat climbing provided a grcatpotential sourcefor optimal expcrience.alldinturn, flow. Spccifically, the flow state was among the most commonly reported states among the climbers during lhe expcdilion. GroveandLcwis (1996)reportcdthalparticipants involved in circuit Iraining did expcriencc flow and that the flow states generally increased as thc exercise was prolonged. Particularly. participants who had more lhan six months ofcircuit training reportcdthe most flow-like experiences. Finally. Sparkes and Partington (2003) concludcdthat flowexpcrienceswereimminentamongthecanocrsandthat describing

flow isa relationalpcrformance.whichis primarilyshapcdbystorytellingofthe participants. Howcvcr. the main purposc ofthcsc studies was not todeterminewhcther participants experienced flow whilc participating in the sport or physicalrecreation activity. but todetennine prcdictorsand correlates of flow

Within the context of flow and sport. research has primarily focuscd on thc determinantsofthcnowexpericncc.For example.sportpsychologistshavcbeen interested in studying intervcntions that may increasc the expericnce of now. and subsequently performance. For example. FTyeretal..(2002)concludcd that music intcrventions induced the now state among some netball players. However.flowstates werenota!waysconsistentwithchangcsinperformance.1everthclcss.now was present among the players following the music intervention. Various psychological determinants

associated with motivation theories including intrinsicmotivation, pcrceivcdability. and enjoymenL lnForticrandKowal's(1999) study.thcyroundthatswimmerswho participated in their activity for their own benelitcxpcricnced the highest amount of

pcrccivcd sport ability had the most substantial correlations with now. Finally. Dallielsct aI., (1995) concluded that the basketball players found the now context to bc the most enjoyable and they reported having the most control in the nowstatc

Somercsearch suggests that individuals are more likely to expcrience nowwhile participating in sports and recreation compared to other typcsofactivitiesthatrequire

less skill and challenge. For example. a study conduclcd by Delespaul el al.. (2004) explored thccontextual and subjecti ve determinants oroow with rcgards to acti vation in studying, and compared thiswith sportsandwatching lelcvision orlistening 10 thc radio Forty-t.hrce undcrgraduatesludentscompletcd lheExpcrienccSamplingMethod qucstionnaireand alvarious momcnts lOtimesaday.studentscvalualcd thc social

highesl activation levels and lowest activalion wasassociatcd with passivc Icisure when

but low in pcrceived skills, sports was challenging and unrelatcd to skills and watching television or listcning to the radio was low in challengesbUi high in skills. Therefore. the charactcrislicsofcngaging in an activily arc intricate and arc rclatcd locontcmporaneous emolions and conlcxt. Despite the body ofrescarch examining lhecxpcrienceofOow in sports and recreation, there has been no research that has applicd Ihc thcoryofOow in an

Thc previous litcraturereviewhas providedmuchinfoOllation on various lheories of excrciseadhcrcncc, faclors of motivation and thc IhcoryofOow. Although it is evident that motivation plays a vital role in cxercise adhcrencc. lhcrc has yct to be a study to dctcrmine the relationship between exerciseadherence. motivalion and Oow.As prcviouslystated. it hasbcen suggcstedthal highly motivalcdindividuals experience high

consistently found to have a positivcassociatioll with physical activity (Dishman &

This study attcmpted todetemline if relationships existed among excrcisc adherence.

(I) Is there a relationship between now experienced by exercise participants.motivation 10 exercise, and exerciscadherence?; (2) To what extcnt is flow associatedwitbexercise adherence?; and (3) What are the difTerenccs (ifany) in flowexperienced and mOlivation

Participants in this study consistcd of (1) individuals whoweremembersof various fitness and recreation complexes and groups throughout St. John's and (2) students attending Memorial University. The aim was to recruit individllalswithavariety of physical activity levels ranging from being physically inactive lobeingveryphysically active. In order to be eligible to participate in tbis study. participants had to be 19 years of age or older. A purposive sampling technique, in whicb an expert llses jlldgmentin selccting cases with a specific pllrpose in mind, was employed to coIlect datafrom participants in various recreation complexesthroughoul St. John'sas well as students auendingMemoriaIUniversity(Neuman, 2007, p.142). Theintent was 10 accumulate

approximately 100 participanls for this study. To recruit partic**ipantsfromfitnessand** recreation complexes and groups. I contacted the complex and groups to request pennission to distribute questionnaires. When permission wasobt**ained, I thendistributed**

interestedincompletingthesurvey Panicif,antshad theOpponu",itytoeither 1)

regarding factors of exercise adherence. Additionally. partieipants completed a questionnaire containing socio-demographic information

Age, dateof birth, gender. education, income and employment statuswere thesocio·demographic variables in this study. Exercise adherence wasthedependent variable in theproposedstudy, definedastheabilityanddedicationanindividualbasinadhcringto aparticularexerciseregime.AccordingtothePublicl-leahhAgency of Canada (201 I). adulls(ageI8-64)shouldbeactive2.5hoursaweektoachieve heahhbenefits. Exercise adberence, conceptualized as levcl of physical activity, was measured using the Baecke QuestionnaireofI-labitualPhysicalAetivity(Baeckectal.,1982). This questionnaire consists of 16 questions tbat separates physical activity into 3 distinct domains: (1) Work Physical Activity (Work PA). (2)Sport Physical Activity (Sport PA) and(3)Non-sports leisure(Leisure PA).Participantsareaskedtorespondtostatemcnts using a 5-point Likert·type scale; with the exception ofa couple of statements relatedtotypesofsports played. TheWorkPAdomainconsistsof8slatements:l)oncstatementisrelated to main occupation as categorized by amount of physical activity associated witb the occupation(1 = lowactivityoccupationssuch asstudyingandofficework; 5 = high activity occupations such as construction work); and 2) seven stalcments related to frequency of sitting, standing, walking, lifting and sweatingduringhoursofwork.A

rangefromlt05. TheSportPAdomainconsistsoffourselsofqueslionS related 10 participationinsport.Thesetofqueslionsfonnoneitcmoflheindcx.Participantsarc firstaskcdwhetherornottheyplaya sport. lftheparticipantdocsplayasport. then they are asked to indicate their two most frequently played sports (opcn-endcdquestion),thc amount oftime pcr week thaI the Sports are played « 1 hour (weightcd score 0fO.5).1-2 hours (weightcd score of 1.5). 2-3 hours (wcightcd scoreof2.5). 3-4 hours (weighted scoreof3.5), >4 hours (weighted score of4.5) and lhe proportion ofthe year in which the sportsare playedregularly« lmonth (weighlcdscore ofO.04). 1-3months(wcightcd score of0.17). 4-6 months (wcighted score of0.42). 7-9 months (weighlcdscoreofO.67). >9 months (weightcd scorcofO.92). Basedonthetypcof sportindicatcd. therescarch detcmlincsthe intensity of sport in tenns of average energyexpcnditurc (BaeckcctaJ..

cxpcnditureofO.76MJIh(e.g.,bowling,goll);2)middlcintcnsilysports with an average cncrgyexpcndilureofl.26 MJIh (e.g.. dancing. badminton, swimming. tennis); and 3) high inlcnsity sports with an average energy expenditure of 1.76 MJIh (e.g., basketball. rowing, rugby). A sport intensity item is then calculated based on summingthcproduct oftheintensily.time,andproportionquestionsforbolhsportS.Sllbseqllcntly. this is then translaledintoa5-pointLikertscore(2: 12 = 5;8to < 12 = 4;4to < 8 = 3.0.0Ito < 4 = 2;0 = 1). Next, participants are asked to respond 10 three stalcmcnts:1)"lneomparison 10 others my own age I think my physical activity duringleisurc is.. :'(I = MlIchlcss;5 = Much more); 2)"Ouring leisure time I sweat" (1 = never. 5 = very oftcn); and 3) "Ouring leisure time 1 play sports"(I = never. 5 = very often). A SportPA index is

calculated asa mean score among these 4 ilemsand lhus scores can rangerrom 1t05 Leisure PA deals with questions with regards to modeortransportation 10 school and work. and rrequcncyoftelevision watching. walking and cycling. A Leisure PA index is calculated as a mean score among these 4 items and thus scores can range rrom1t05.A total physicai activity score is calcuialed as the sum score orthe threeindicesthus allowing a total score rrom three (minimum) to fifteen (maximum). AccordingtoHertogh etal. (2008). lhe validity ofthe Modified Baecke Qucstionnairc is fair-to-moderate. It was also detennined that the questionnaire can correctly dassify individualsas lowor high active. but docs a poorjob for moderately active individuals. The construct validity ofthe questionnaire has been assessed in comparison to doubly labeled water. which is considered the gold standard measure in temlSofenergy expenditure: the total activity index ofthe Baecke yielded correlation cocfficienls of.68 againsl doubly labelled wmcr (Philippacrtsetal.,2001). Olhcrinvestigators havealsofound goodconstruct validity for the Baeckc when comparcd 10 the doubly labcledwatertcchniquc (p = 0.54; Hertogh ct aI..2008). Thescale has proventohave good tcsH ctcstrcliability; indicalinggood rcpcntnbilily aftcr 5 and II months among men and women agcd 20-70years(Polsctal.. 1995). Tcst-rclcsl correlationcoefficientsrangedbclween .65and .89,and rclative validitywas lcslcdbycomparingthcqucstionnairc lo afollrtimcs repcated 3-dayactivity diary wilh corrclations of .56 among menand.44 among women (Pols et al., 1995)

Flow and motivation were the indepcndent variabies in this study. Flow is defined as a very positive psychological state that typically occurs when a pcrsonpcrceivesa balance between the challenges associated with a situation and his or hercapabilitiesto

accomplish ormeetthese demands(Csikszenlmihalyi, 1990). Jackson andMarsh (1996) dcveloped theFlowStateScalewhich measurespeoplc's level of flow in aspecific activity. The Flow Trait Scale (Jackson et al.. 1998) was developed asa parallel trait version ofthis state instrument. The theory of flow states that the autotelicpersonality can explain why some people are more likely to experience flow than others. Thus the Flow Trait Scale was developed using the same items that arc reworded to assess participant's dispositional assessment of the dimensions of flow in relationtotheir general experiences rather than an assessment of flow in rclation toaspecificexperience ThcFlowTraitScalewassubsequentlyrenamedthcDispositionalFlowScaIe Modificationswerc made to this original version in order to improve lhemeasurcment of some of the flow dimensions resulting in the current version callcd the Dispositional Flow Scale-2 (Jackson ct aI..2002). This scale consistsof 36 itcmsbascdonthe ninc dimcnsionsof flowcitcdbyCsikszentmihalyi (1990)tomcasurcthefrequency of flow expcriences in a chosen physical activity and in general. It collsists ofnincsllbscales Challengc·Skill Balance(e.g.:·'I amchallengedbut Ibclieve my skills will allow me to mcet the challenge", Clear Goals (e.g. "I know clcarly what I want to do"), Unambiguous Fcedback(e.g.·'I amawareofhowwell I amperforming"),Scnseof Control (e.g. "I feel in tolal control of what I'm doing"). AUlotelic(e.g. "I love the feeling of thai pcrfonnanceandwanttocaplureitagain"),Mcrgingof Actionand Awarcncss(e.g Things seem to bc happening automatically"). Concentration on theTaskat Hand (e.g. "Myattention is focused entirely on what I amdoing").Tmnsfomlation of Time (e.g 'OThe way time passes sccms to be different from nonnal") and Loss of Self-

Consciousness (e.g. "I am not concerned wilh whal others may be thinking of me")

Items are rated on a S-point Likert Scale varying from "l" (never) to "S" (always). with highervaluesindicalingmore flow.Subscalesarecompuledbythe average of the four respeclive items. A total scale score is obtained by summing the itcm-averagedill1ension scores. The Dispositional FlowScale-2demonstratesgoodconstrllct validilyinlerll1sof its factor structure and acceplable internal consistency with alpha levels on the subscales rangingfrom.78to.92(Marsh&Jackson, 1999; Jackson&Eklund, 2002; Jackson etal.,

Intrinsically ll10tivalcd activities are defined as aClivities that individuals find intercstingandwouldparticipatein theabsenceofoperationallyseparable consequences (Deci& Ryan.2000). Contrarily, extrinsic l1lotivation is defined as the performance of a particularactivityinordertoaltainaseparableolltcome(Ryan&Deci, 2000) Motivation to be physically active was measured using the Motives for Physical Activities Measure-Revised (Ryan et aI., 1997) which determines reasons for participating in particular exercise activities. This scale isa revision of the Motives for Physical Activity Measure (Frederick & Ryan, 1993) and it wasbased on pilot testing of items (factor analysis and construcl studies) on twodifferent samplcs. The scalcconsists of30 ilcmswhicb forml five general motive sllbscales forparticipationinanactivily Inlcrest/Enjoyment(7 items; e.g., "Makes me bappy"), Compctcnce(7ilemse.g., "Like physical challenges"), Appcarance (6 items e.g., "To define mllscles, look better"), Fitness(Sitems; e.g.. "To improvecardiovasclilarfitness")andSocial (5itemse.g.. "To be with others inactivily"). Each of these items is rated on 7-pointLikertscales.The

items range from"\" (not at all true forme) to “7” (very lruc forme)withhighcr scores indicating a higher level of truth with the spccific slatcmcnl. Sub-scalc scores are

and validityoflhe faclors demonstralcs a clear factor structure ofthe scale items. intemal consislency(alphasabove.87foreachsubscale)anddifTerentia\relations with both choice ofsportlexercise aClivities and associated outcomes (Frcdcrick & Ryan. \993:

All panicipantswere providcdwilhanidentification code (i.e.. no idcmifying

andanalyzedinSPSSI 7.0.First, dalawasscrccnedfor missingandinvaliddalapoints. and assumptiolls forperfonning parametric tcsts were tested. Descriptive statistics were conducted on socio-demographic and study variables. Next. correlationswcreconductcd 10 determine bivariate and partial correlationsbctween excrcise adhcrcncc, motivation. and Oow.Finally,ascriesofmulliplcrcgrcssionsand analysisofvarianccmodelswere condllctcdin order lo dclcnnine \) lherelationbetwcen nowcxperienced bycxcrcise panicipants,motivatiolJ to exercisc, and exercise adherence, 2) theextenttowhichOow is associated with exercise adherence, and J) 10 identify difTercnccsinnowcxpcrienced and motivation to exercise among active versus sedentary participants

Thenatureofthisstudywasnon.thrcateningandposcdminimalrisktothe panieipantsinvolved. The danger existed in lhat a surveyqueslion may have triggered unpleasant memories and generalCd negaliveemotions for lhe panicipanls. However.the queslionsposed likely did not causcany negative feelings for lhe panieipanls. Duetothe fact that panieipants in this study were rcquired loeomplelcthreequestionnaires.the timedcdication may have resulted in a stressful responsc. Although lhisstudy did not poscmuch hann. it also did not pose many benefits either. During the complction of ccnain questionnaires. panicipams may have acquired new infomlalion about their panicipation in physical activity and mayor may nOI havechangcd theirpanicipation habits based on this infonnation. Since all panicipants in this study were19+ yearsof age. compclenee was assumed. Additionally. panicipantsvoluntccrcd 10 complete a survey. Panicipanls were also told that their panicipation was voluntary and that if they decided to not complete the questionnaires. there were no repcrcussions,pcnaltyor haml Participants were permitted to withdraw from lhc study at any time. In addition. conl1dclltiality and anonymity of the participants and their infonnationwasensured Participants were also told that their information would nol be used for any other purpose other than for the study and that their infommtion would be kept ina locked cabinet throughout the rescarch process. Upon completion of the research. data will bc erased or

The followingchaptcrwill discuss the results ofthc study. Sampledescriplives will bcdiscussed proceeded by correlalion resuhs of flow. physical activityand motivation. Regression rcsultsare presenlcd which detcmlincd the associalionbctwecn

vanables.Finally. aseriesof independentt-testsareprcsentedwhichdetermined diITcrcnccsinthccxperienceofflowandmotivationamongactivcvcrsu5 less active

Thercwerc *1OO(n* = 100) participants in this study who rangcd in age from19-58 *(M = 27.8; SD* = 9.05). Moreover.80%(n = 80)werefcmalcand 200Io(n = 20)wcre ma]c.Sixly-cight pcrccnt (n = 68) of participants reported bcingasllldcnt while *30%(n* = 30) wcrc not studcnts. Fifty-seven percent (*n* = 57) wcrc cmployed fulltime, *32%(n* = 32)wcrcemployedparttimc, 8%(n = 8)wcrc llncmploycd/homcmakcrand 1%(n = 1)

a high school ccrtificatcor cquivalcnt.38%(n = 38) had some post-secondaryeducation (posi-secondary not complcted). *15%(n* = 15) had accrtilicatc ordiploma fromа community college or trade school. *34%(n* = 34) had **a** universilydcgrec an*d9%(n = 9)* hadoblainedagraduatedcgrec.\Vithregardstoannualhouseholdincome. 19%(n = 19) ofparticipanls reported less than SIO.000. *14%(n* = 14)rcportcdS tO.OOO·19.*999. 1OOIo(n*

= 10) reponed S20.000-29.000. 4%(n = 4)reponedS30.000-39,000.9%(*n = 9)* reponed S40.000-49.ooo.6%(n = 6)reponedSSO.000-S9.000. 10%(n = 10)reponedS60.000-*79.999.6%(n = 6)* reponed S80.OOO-99.999 and 18%(n = 18) reponedoverSI00.000

Exercise adherence. conceprualized as levelofphysicaJ activity. was measured using the Baecke Questionnaire of Habitual Physical Activity (**Baecke.Burema& Frijters. 1982).Thisquesliionnaire consistsof I6quesliionsthat seperatesphysical** aClivity **inlo3 distinctdomains:(I)\VorkPhysicaIActivity(WorkPA).(**2) Spon Physical **AClivity(SportPA)and(3)** on·sports leisure (Leisure PA). **TheWorkPAdomain**

amounl ofphysical aClivityassociatedwiththe occupation (1 = lowaClivityoccupations such as studying and office work; 5 = high activity **occupations** such as construction **work). Inlcrmsofintensityofparticipants'occupation.91 %(n** = 91) people were **classificdas lowintcnsily. 8%(n = 8)as middlcintcnsityandl %(n = 1)peoplcwcrc classificdashigh intcnsity.Additionally. scven statemcnts rc**latedto frcqucncy of sitling. st3nding, walking. lifting and sweating during **hours** of work wcrc provided (sec Table 1)

scorescanrangc fromlto5. The means of the Work **PA** statcmcnls were as follows Wilhrcgards to thequestion"Whatis your main occupalion?··. *M* = **I.2. In tcmlsof lhe** question "Alwork I sit**".** M = 3.9. With respeci to Ihequcstion"AI **worklstand".M** =

2.9. Wilh regards to the queslion "At work I walk".M = 3.0. In tcnns of the question"AI work I lift heavy loads". M = 2.0. With respect to the question "Afterwork I am tired", M = 2.9. In tennsofthequestion"AI work I sweat". M = 2.0. Withrcgards to the question " In comparison ofothers ofmyo\"n age I think my work ph)'sical activity is much heavier. etc". M = 1.9. This population had a mean Work PA score of 1.76 (SD = .40; $z_{skewness}$ = 3.71; $z_{kurtosis}$ = 2.19) indicating that as a whole. the respondents did not rcceivem uchphysical

Table I: Descriptive Statistics for Work Physical Activity

Atworklsit[a]	3.9(.98)	-4.48	2.26
Atworkl stand[a]	2.9(.99)	0.65	-1.01
At work I walk[a]	3.0(1.02)	0.73	-1.01
At work I lift heavy loads[a]	2.0(1.03)	4.51	1.62
After work I am tired[a]	2.9(1.03)	-0.90	0.33
At work I sweat[a]	2.0(.91)	2.82	0.27
In comparison of others of my own age I think my work physical activity is...[b]			

[a] 1 = never; 5 = always
[b] 1 = much lighter; 5 = mu

TheSportPAdomainconsistcdoffour sctsofqucstions rclalcdtoparticipationin sportlphysicalactivity. incty-ninepercenl (n = 99) people rcportcd participating in sport. physical activity or exercise in comparison to I%(n = 1)pcople who did not participatc in physical activily. According to the BaeckeQueslionnaircof Habitual **PhysicalActivity(BaeckeetaI..1982).participant"sactivitics** 3Teclassified in tcnnsof

averagccnergyexpe:nditurc(I = low inlensity.2 = middle inlcnsity.3 = highintensily) Ofthe most frequently participmedactivity reported by participants.6%(n = 6)were classified as low intensity. *74%(n* = 74) were classified as middle inlensityand *20%(n* = 20) were classified as high intensity. Furthcnnore.21%(n = 21)participatedin running. *31%(n* = 31)participatcd in hikinglwalking.20%(n = 20) were classified as participatingincardio/wcightslgym.3%(tI 3) participated in yogaJpilates. *6%(n* = 6) participalcdinaerobicsand 13%(n = 13)participatcdinindividualsportsiactivities.On averagc.participantsreportedparticipating inthcirmoslfrcqucntlyparticipatcdphysical activity 3-4 hours pcr week dunng 7-9 months ofthe year. Ofthe second most participated inactivity. *7%(n* = 7) were classified as low intensity. 76% (n = 76)werc classified as middle intensity and *13%(n* = 13) werc classified as high intensily.\Vith rcgards to thc typc of physical activity that was stated as the second most in participated aClivity. *8%(n* = 8) of participants participatcd in running. 17%(n = 17) participatedin hiking/walking. 26%(n = 26) participatcd in cardio/weighlslgym. *4%(11 = 4)* participatcd in yogalpilatcs, 15%(n = IS)participalcdin colllpctitivesports.8% (n = 8) participalcdinacrobics and *18%(n* = 18) participatcd in individual sports/aclivitics.On averagc,participantsrcportedparticipaling intheirsccond lllostfrequcnlly participatcd physical aclivity 1-2 hoursper wcekduring4-6 monthsoflheycar.Asportintcnsity itcmwasthcncatculalcd basedonsulllmingthe produCloflhc inlcnsity. limc.and proportion questions for both sports and trans!aled into a S-poinl Likcrt scorc. On average. Ihesample had a sport intcnsity score of3.0 *(SD = .72)* indicatingthaltheywcre modcralely physically active. Next. participants were asked to rcspond to3slalcments: 1)

·'In comparison to others my own age I think my physical activity during leisure is…·'(1 = Much less; 5 = Much more); 2) "During leisure time I sweat" (1 = never, 5 = very often);and3)··Duringleisuretime l playsport""(I :: nevcr.5 :: veryo ften). In companson toothers their ownage.participantsreportcdbcingaboutthesamcintenns of physical activity during leisure time (M = 2.5. SD = 1.07; $z_{skewness}$ = 1.51; $z_{kurtosis}$ = -1.34). Participants often sweated during their physically activc leisuretime(M = 3.59. SD = 1.01; $z_{skewness}$ = 1.30; $z_{kurtosis}$ = -.45). Finally, participants often played sports during their leisure time (M = 3.66, SD = .97; $z_{skewness}$ = -.94; $z_{kurtosis}$ =-1.23). A Sport PA index wascakulated asa meanscoreamong thesc4 itcmsandthusscorcscouldrangc from1 to5. Thissample hadamcanSportPA scoreof3. 18(SD .41; $z_{skewness}$ = -1.44; $z_{kurtosis}$ = 06) indicating that asawhole, the rcspondcnts were modcralclyaclive during thcir

Leisurc PAdcalswithquestionswithrcgards tomodcoftransportatiOlltoschool and work, and frcqucncyoftclevision watching. walking and cycl ing. Participants rcspondcd to four statcments related to frcqucllcy of watching tclcvisionandwalkingand cycling during Icisurc time (i.c., active transportati on) as wcll as the number of minutes Ihatoncwalks andJorcyciesperdaytoand from work. school and shopping (sec Table 2). A Leisure PA indcx wasca!culatcd as a mcan scorc among these 4 ilcms and thus scorescould rangcfrom1to5. Thissample hadamcan LeisurcPA scoreof 1.27(SD = 56; $z_{skewness}$ = .40; $z_{kurtosis}$ = -1.25) indicating that as a whole. the rcspondents wcre not very physical active during thcir leisurctime. Finally. a total physical acti vity score was

(minimum) 10 fifteen (maximum). On average, participants had a mean tOlalphysical aClivityscoreof6.23 (*SD* = .93)and this variablc was not significantly skewed ($z_{skewness}$ =

Table 2: Descriptive Statistics for Lcisure Physical Activity

During leisurctime I walk[a]	3.2(1.01)		
During leisure time I cycle[a]	1.8 (1.03)	4.40	.19
Minutes/day walking/ cycling to and from work/ school/ shopping	2.9 (1.38)	0	-2.55

[a] 1 = never; 5 = very often
[b] 1 = <5 minutes; 2 = 5-15 minutes; 3 = 15-30 minutes; 4 = 30-45 minutes; 5 = >45 minutes

Flowwasoperationalizcd inthisstudyusingtheDisposilionalFlowScale·2 (Jackson et al., 2002). This scale consists of36 items based on the nine dimensions (4 itemspcrsub-scale)oftlowcitedbyCsikszentmihalyi(1990)tomeasurc Ihe frequency oftlowexperiencesinchosenphysicalaclivityingenera1.lt consistsofnine subscales:1) Challenge.SkiIlBalance. 2)ClearGoals,3)Unambiguous Feedback. 4) Sense ofControl,

5) Autotelic, 6) Merging of Action and Awareness, 7) Concentrationontheaskat Hand,8)TransformalionofTimeand9) LossofSelf-Consciousness.Subscalesare computedbytheaverageofthefour respective items. Please rcfer toTable3for thc descriptivestatisticsoflheitemsandsub-scales.Themost frequentlyexperiencednow items include "I know what I want to achieve " (M = 4.1; SD = .80), "I have a sense of control over what I am doing" (M = 4.1 ; SD = .71), "I really enjoy the experience of what I am doing" (M = 4.1 ; SD = .74), "The experience leaves me feeling great" (M = 4.1; SD = .81), and "The experience isextremcly rewarding" (M = 4.1; SD = .81). In terms ofthe frequency ofthe experience ofthe nine dimensions now, the sample, on average, reported them in the following rank order (highest to lowest): I)Autotelic,2) Clear Goals, 3) Sense ofControJ, 4) Challenge-Skill Balance, 5)UnambiguollsFeedback. 6) Merging of Action and Awareness 7) Concentration on the Task at Hand, 8)

obtained by summing the item-average dimension scores (I = no experience of now; 45 = frequent experience of now). On average, this sample experienced a mean Total Flow score of 32,9 (SD = 4.21 ; $z_{skewness}$ = -1.35; $z_{kurtosis}$ = ,94) indicatingthalparticipants experienccd moderatc levels ofnowduringtheirmostfrequently participatcdphysical

Table 3: Descriptive Statistics of Dispositional Flow Scale-2

I am challenged but I believe my skills will allow me to meet the challenge	
I do things spontaneously and automatically without having 10 think	
I have a good idea about how well I am doing while I am involved in the lasklactivily	
I can tell by the way lhings are progressing how well I am doing	

MOlivationto be physically active was measured using the Motives for Physical Activities Measurc-Revised (Ryan et aI., 1997) which detennincs reasonsfor participating in particuiar excrcise activities. Thc scaie consists of30itemswhichfonn5 gencralmotivesubscaicsforparticipationin anactivily: lnlcrcstlEnjoymcnt(7itcms). Compctcncc(7 items), Appearancc(6 items). Fitness (5 itcms)andSocia1(5 items). Each ofthcsc items is rated 011 7-point Likert scales. Thc itcmsrangc from"l"(not at all true for me) to"7" (very true forme) with higher scores indicminga higher levcl of truth with the specific statcmcnt.Sub-scalcscoresarccalclllatcdasthcmcan scorcofallitcms within each sub-scale. Plcase refer to Table 4 for the descriptive statistics oftbe items and sub-scales. The most frequently experienced motivation itcms includcd "Bccausc I want tobephysical1yfiC'(M := 6.3;SD = I.03),"Becauselwanttomaintainmy physical hcalth andwell-being"(M = 6.3:SD = I.II)."Becauselwant lo havemorecnergy"(M:= 6.2;SD = \.Ol).'·Becausclwanttomaintainmyphysical strcngthandlivcahealthylifc" (M - 6. I:SD =.89)and··Becauseilmakesmchappy ··(M= 6. I:SD = 1.08). The rank order (highcst to lowest) of the motivation sub-scales forthissampIcwercasfollows: I)

Fitness, 2) Interest/Enjoyment, 3) Appearance, 4) Competence, and5)SocialAtolal motivation score wascalculatcd by summing the item.averagcdimensionscores.On average, this sample experienced a mean Total MOlivationscore of26.9(SD = 4.18; $z_{skewness}$ = -.65; $z_{kurtosis}$ = -1.01) indicating Ihaton average participanls reported a moderate level ofmotivation to participate in physical aClivity

Table 4: DescriptiveStatisticsofMolives for Physical AClivities Measure-Revised Scale

Because I like engaging in activilies Ihal physically challenge me	

Because I want to maintain my physical strength to live a heallhy life

Because I want 10 mainlain my physical health and well-being

In order to measure the strength of the relationship bctween socio-demographic variables (gender and age) to physical activity (work physical activity. sport physical activity. leisure physical activity. and total physical activity)now(TotaIFlowand subscales:Challengc-SkiIlBalance.MergingofActionandAwareness.Clear Goals. UnambiguousFeedback. ConcentrationontheTaskatl·land.Sen.scofControl. Loss of Self-Consciousncss. Transformation ofTimc and Autotclic Expericnce) and motivation (totalmotivationandsubscales: lnterestlEnjoyment.Competcnce. Appearance. Fitness and Social). a serics of Pearson cOITclation coefficicnts wcre conducted

GCllder was significantly positively associated with work physical activity(r = 2S6.p < .OS;small efTect:r = .017)meaningthatmalcsexperienccdhigherwork physicalactivity lcvcls. lntcrmsofthecxperienceof now,gcnder hadasmall (r = .013) but significnlll and positive relation with Challenge/Skill Balancc(r .2S0,p < .OS) suggesting that males participate in physical activity where the chnllcngc meets their cllrrcnt skill level. Males also reported greater scores of Total Flow in comparison to femalcs(r = .209,p < .OS;largeefTect:r = .043). ln tcrmsofmotivation. genderwas significantlypositivclyreiatedwithlnterestlEnjoyment (r = .273.p < .01)and Competence (r = .349.p < .00I); howeverthecfTects were small. This 5uggeststhat males participate in physical activity fOftheirown intcrestlcnjoymentand to improve on thcirown knowledge/skill base. Finally. gender was also significantly positively

significantly negatively associated with the Social motivatiotl sub-scale(r = -.2 10.p < 05; largeefTectr = .040)suggestingthataseducation increased,thcconceptionof participating in physical activity for social purposes decreased. Finally, contrary 10 lhe beliefthaI higher ratcsofexercise bchaviour have bccllcorrelatcd with increased socioccon omicstanding(Rhodcsetat.,1999,p.399),incomewasnot significantly

Physical Activity (Work PA),Sport Physical Activity (Sport PA), Leisure Physical Activity(LeisurePA),andTotalPhysicaI Activity(TotaIPA).Total PAscoreswere significantlypositivclyassociatcdwithWorkPA(r = .515.p < .00 1;smallefTect:r < OOI),SportPA(r = .7 16,p < .00I ;smalletTcct:r < .001)and Leisure P*A (r = .757,p* < 00I ;smalleffect:r < .OO1)meaningthatpeoplewithhigh lcvclsofwork, sport and Icisure physical activity also had high levels of total physical activity. SportPAwas significantly positively associated with Leisure PA *(r = .289,p* < .O1;small effect:r = 004) suggesting that people who are physically active in sport are also physically active

In terms of the relation belween physical activity and thc flow sub-scales, Sport PA was significantly positivclyassociated with ClearGoals(r = .223,p < .05;medium etTect r = .027)andAulolclic(r = .234,p < .05;mediumeffectr = .02l) suggcstinglhat clear goals arc clearly evident in higher levels of sport physical activity, conceivablydue to the highlycompclitive nature of sports, as well as signifying Ihe highly psychological aspectofsports. Incontrasl, Leisure PAwassignificantlynegativelyassociatcdwith Merging of Action and Awareness(r = -.214, p < .05; medium cfTect *r* = .034) and with

associalionssuggest that since leisurephysicalaClivityisgenerally participatedinata lowinlensity, onecannotreach optimalpsychologicalleve1swhich result in total immersion in the activity. Additionally, due to the less intcnsenalureofleisurephysical

In terms of lhe relation belween physical activity and motivation sub-scales, Work PAwasnotsignificantlyassociatedwithmotivation. Sport PA(r = .282, p < .OI;small effcct:r = .034)andTotalPA(r = .281,p <.05;smalleffectr = .OI)weresignificantly positively associatcd with the IntercstiEnjoyment motivation subscale suggesting that people participated in sport for their own satisfaction and that people generally participatcdinphysicalactivilyforlheirownpleasure.Similarly.SportPA(r = .36 1, p

were significantly positively associated with the Competence motivationsubscale suggesting that higher levels or competence are associated withsportparticipationand that people partake in physical activity to further develop their pre-exislingskills, qualities, etc. Finally. Sport PA was also significantly positively associated with the Fitnessmotivationsub-scale(r = .214, p < .05;medium efTect: r = .034). Sport PA was the only form of physical activity that was significantly positively associated with Total Motivation(r = .299.p < .01 ; smalleffect:r = .004)suggestingthat people tend 10 be mOlivated the most in sport participation compared to work orleisurephysicalactivity

significantly positively associated with all nine dimensions of flow: Challenge-Skill Balance(r = .760.p < .001; small effect:r < .001); MergingofActionandAwareness (r = .638, p < .001; small effect:r < .001);Clear Goals(r = .734,p < .0OI:small etTect:r < 001); Unambiguous Feedback *(r* = .789, p < .OOI ; small effect: r < .OOl); Concentration ontheTask atHand (r = .754,p < .001 ; smallcffect:r < .001):SenseofControl(r = 807, p < .001 ; smalleffect:r < .OOI); LossofSelf-Consciolisness(r = .433, p <.00 I; 001);andAutotelic(r = .693, p < .001;smalleffect:r < .001)

In terms of correlations among the flowsubscales, the Challenge-Skill Balance dimensionofflowwassignificantlypositivelyassociatedwithfive olher dimensions of

Oow: MergingofAclion and Awareness Total (r = .443.p < .OOI;small effect:r < .OOI); Clear Goals Total (r = .585,p < .OOl;smalleffect:r < .OOl);Concentralion on IheTask atHand(r = .643,p < .001;smallerrect:r < .OOI);SenseofConlrol(r = *.549, p <.OOl;* ;smallefTectr < .OOI);andAulotelic(r = .583,p < .OOl ; smallefTect:r < .OOI).ln addition tothepositiveassociationwiththeChallenge-Skill Balance dimension, the Merging of Action and Awareness sub-scale was significanlly positively associated with allother Oowdimensions:ClearGoals(r = .323,p < .OI;smallerrect: *r < .OOI)* suggeslingthatpeoplebecomeimmersedinanactivitywhen lheyhave goals set; UnambiguolisFeedback(r = .454, p < .OOi;smallelTect:r < .OOI)meaninglhatpeople may become immersed inactivity when they are aware ofhow they are anaining their goals; Concentration on the Task at Hand(r = .325, p < .01; small errect:r = .OOi) suggesting that when people become immersed in an activity, theymayhavehigher

signifying that people may become immersed in activity when they exhibit complete control; LossofSeif-Consciousness(r = .302,p < .OI; small efTect: r = .002)Suggesling that as people bccome immersed inan activity, they have less negative thoughts and uncertainties; Transfomlation of Time *(r* = .286, p < .OI; small efTect:r = .004)meaning that as peopie bccome immersed in an activity. time seems to slow down or speed up; and Autotelic(r = .328.p < .0I;smalleffect:r = .00I)suggestingthataspeoplebccome

In addition to its positive association with the Challengc-Skill Balance and Merging of Action and Awareness dimensions ofOow, the Clear GoaIs subscale was also

significantly POSilivclyassociated with Unambiguous Feedback (r = .789,p < .001;small effect:r < .OOI)andConcentralionontheTaskatHand(r = .560,p < .OOI;smallelTecl r < .001) meaning thatpeoplewhoeslablishedgoalsforanaCivity had higher levels of

signifying lhat people may feel more in control in anactivitywhcn lhey have goals set andAutotelicTolal(r = .530.p < .00I ;smallefTectr < .001).TheUnambiguous Feedback dimension ofOow was significantly posilivelyassociated with Concentration ontheTask at Hand(r = .557,p < .001;smallefTect:r < .OOl)meaningthat people may experience higher concemration levels when they are aware of how they are doing; Sense ofControl(r = .652,p < .001;smalleOectr < .00I)suggeslingthatpeople may feel more in control when they are aware of how they are doing; Transfommtionof Time *(r* = 206, p < .05; largeefTect:r < .05);andAutotelic(r = .548,p < .001;small efTect:r < 001). The dimension of Concentration on the Task at Hand was significantlyposilively

that people may experience higher levels ofconcentration when they felt they were in completecontrolofthcaclivity;TransfomlationofTime(r = .33 1.p < .0I;smallelTect r < .001)meaning lhatpeoplcmayfeeltimespeduporslowdownwhenthey experience great concentration; and Autotelic(r =*,429, p <.001;* small cfTect: r < .OOI) meaning people who experienced intrinsicenjoymcnl in an activity also expcriencedhigh

ofSelf-Consciousness(r = .234,p < .05;medium efTcct:r = .02)meaningthatpcop[c who experienced total control in an activity may have also been free ofnegalive thoughls

about thc01sclvcs; Transformationofimc(r = .274,p < .OI;small clTcct:r = .006) suggcstingthat people who experience total control in an activityalso feel that time is altered; and Alltotelic 1(*r* = .510, p <.00I; small effect: r < .00 I)suggesting that peoplc whoexperience total controlmayalsoexperienceintrinsicenjoymentintheactivity Finally, the Transformation ofTime flowsubscale was significantlypositivelyassociated withAutotclic(r = .274,p < .OI;smalleffect:r = .006)sllggesting that people who experiencc an alter in time in physical activity are also experiencingintrinsicenjoyment

was not significantly associated with the Appearance or Social motivationsubscales;

InterestlEnjoyment(r = .5 17, p < .OOI;smalieffcct:r < .OOI)sllggesting that people with high levels of flow also participated in physical activity for theirowninterest; Competence(r = .489,p < .OOI;smallclTect:r < .00 I) suggestingthat people with high levels of flow may also participate in physical activity for theirown benefit;andFitness (r = .2 16,p < .05;medium efTectr = .037)mcaningthatpeoplewith high levelsofflow may also participate in physical activity for fitness reasons. Total Flow and TOlal Motivationscoresweresignificantlypositivelyassociated(r = *.358,p <.Ol ;* small efTect r = .OOI)suggestingthatpeoplewithhighlevelsofflowalsoexperiencehighlevelsof

In terms ofcorrclations among the flowsubscales, theChallenge-Skill Balance dimension of flow was significantly positively associated with the lntercstiEnjoyment mOlivationsubscale(r = .517, p < .001;smallefTectr < .OOI)suggesting that people will generally select activities that match their current skill level which in turn promotes enjoyment;Competence(r = .608,p < .001;smallefTectr < .001)implying that people arc likely morecompctent in their activity participation when their skillsmeetthe cballenge ofthe activity; and the Fitness subscale(r = *.359,p* <.00I ;smallcfTect:r < 001) signifying that people want to become physically fit inactiviliesthat match their current skill level. The Challenge-Skill Balance dimension of flow was not associated withtbeAppearanceorSocialmotivationsubscales.MergingofAclion and Awareness wassignificantly positivelyassociatcdwithlnterestlEnjoymcnt (r = .317,p < .01 ; small elfect: *r* = .002)signifying that when people become immersed in activity, theymay experienccgrcatcrenjoyment;andCompctence(r = .287.p < .01;small efTect:r = .004) The Merging of Action and Awareness dimension of now was notassociatedwith Appearance, Filness or Social motivationsubscales. TheClearGoalsdimensionofflow wassignificantlypositivelyassociated lntcrestiEnjoyment(r = .321,p < .Ol;small efTect r = .00I)meaningthatpeoplemayexpcriencemoreenjoymcntinanactivity when they havegoalssct;Competence(r = .346,p<.001; smallefTect:r < .00 I) suggesting that people who set goals may do so to improve on their own skills; and thcFitness motivationsubscalc(r = .324,p < .01 ;smallcfTect:r = .OOI)mcaningthat people who participate in physical activity for fitness purposes. may also eSIablish goals.Thus,Clear

Unambiguous Feedback was significantly positivclyassociated wilh lntercstiEnjoyment (r = .356, p < .OOI;smalleITect:r < .OOI)meaningthatpeoplewhoparticipated in physical activity for their own enjoyment may also be aware Of lheir progress throughout theactivity;Competencc(r = .423,p < .OOI;small effcct:r < .OOl);and the Fimess motivationsubscale(r = .261 , p < .OI;small effcct:r = .009)meaningthatpeoplewho engaged in physical activity for fitness purposes may also have been awarc of how well they were doing in the activity. Again, this dirnension of flow (Unambiguous Feedback) was not associated with appearance or the social motivation subscales. The tlow

withlnlerestiEnjoyment(r = .365,p < .00I ; smalletTect:r < .00I)suggesling that people who participated in physical activity for their own enjoyment also experienced higher levelsofconccntration;andCompetcnce(r = .43l , p < .OOI;smalleITect:r < .OOI) meaning that peoplc who participated in physical activity fortheirown benefit also experienced high levels of concentration. This dimension of tlowwasnotassociatedwith the Appearance, Fitness or Social motivation subscales

InterestiEnjoyment(r = .416,p < .OOI;small effcct:r < .OOI)meaningthat people who experience total control. also participated in physical activity for their own interestJenjoymcntand Competence Total *(r* = .340.p <.OI; small clTect:r < .OOI) suggestingthatpeoplcwhocxpericncctotalcontrol alsoparticipatcd in physical activity

Appearance, Fitness or social motivation subscales. The flow dimensionsof

associatedwith theAppearanceor Socialmotivationsubscalesblit was significantly positively associated with InterestlEnjoyment(r = *.622,p* <*.00*1;smalleffect:r < .OOI) suggesting thai people who participate in physical activity for their own enjoymenl also expericnceintrinsicenjoyment;Competence(r = .515,p < .001:smallefTect:r < .OOI) suggesting that people who participate in physical aClivity for their own benefit also experience intrinsic enjoymenl; and Fitness(r = .310,p < .01;srnallefTect:r = .002) suggesting that people who participate in physical aClivityforfiIness reasonsalso experience intrinsicenjoyrnenl. Total Motivation wassignificantly positivelyassociated with the following dimensions of now: Challenge-Skill Balance(r = .490, p < .001; smatlefTect:r < .00 1);ClearGoals(r = .306, p < .01;smallefTect: r = .003); UnambiguousFeedback(r = .311,p < .01;small efTect:r < .001);Concentralion on the Task at Hand *(r = .283,p <.01;* smal l effect: *r* = .006);SenseofContr*ol(r = .254,p <*

their current skill level, possibly due to the decreased chance of failllre. These results may also suggest that people who have high motivation towards participation in physical activityalso setgoals,areawarcofhowwelliheyweredoingduringparticipation,have higher concentration tevels; have greater senseofcontrol inan activity and experience intrinsicenjoymcnLTotal Motivationwasnotassociatedwiththe Merging of Action and

physicaJ activity for their own intcrcst may do so for their own bcnefit or for fitness or

445.p < .OOl:smallefTecl:r < .00I):andSocial (r > .369.p < .00I:small efTectr <

adherence (sport physicaJ activity). motivalionand now. while controllingforsocio·

(sport physical aClivity) and prcdiclorvariables(socio-demographics.TolalMotivation

with gender bUI was negativelyassociatcd with age meaning that as age increased(f3 = -

variables explained 7. 1% of the variance in total anxiety. Step 2 of this model revealed that greater motivation ($\beta = .323$, $p \leq .01$) was related to greater participation in sport physical activity, and accounted for 9.9% of the total variance. After controlling for gender. age and motivation, Total Flow was not significantly reiated to sport physical

thisregressionmodelexplainedI4.9%ofthe totalvarianccwithin sports participation

rable5:HierarchicalregressionanalysisofSportPAandTotal FIow and controlling for socio-demographicsand motivation

physical activity was positively associated with Total MOlivation(jJ = .327, $p \leq .01$) and explained 9.9% of the variance. Results from sIep 3 indicaled thai sports physical acti vity was nOl significantly associated with the Challenge-Skill Balance dimension of Ooward onlyconlributedl .2% totheexplainedvariance. Overnll.thisrcgressionmodel explained 12.6% of the total variance within sports participalion

Table 6: Hierarchical regression analysis of Sport PA and the Challenge-SkillBalance dimension of Flow controlling for socio-demographics and mOlivalion

To detcmline the relalionship bctwccn sport physical aClivity participationandlhe Merging of Action and Awareness dimension of Oow.a hiernrchical Iinear regression model was computed Crable 7). Results frolll slep I indicated that sport physical activity was not significantly associated with gender or age. Results from step2indicatedthal

aClivity was not significantly associated with the Merging of Action and Awareness

rcgrcssion model explained I 1.4% of the lotal variance with in sports participation

was positively associated with motivation ($\beta = .328$, $p \leq .01$) and explainedIO.3%ofthe

Table 7: Hierarchical rcgression analysis of Sport PA and the Mergingof Action and Awarenessdimensionof Flowcontrollingforsocio-demographicsand motivation

Table 8: Hicrarchical regression analysis of Sport PA and theClear Goals dimension of Flowconlrolling forsocio-demographicsand motivation

UnambiguousFcedbackdimcnsionofOow,ahierarchical linearregression model was computed (Table 9). Rcsuits from step I indicatcd that sport physi cal activity was not significantlyassocialcd witbgenderorage. Results from step 2 indicated that sport physical activity was positively associated with motivation(fJ = .331 , P <.001) and explaincd 10.4%ofthevariance.Resuitsfromstep3indicmedthatsport physical activity was nolsign ificantl yassociated with the Unambiguous Fecdback dimension of now and onlyexplained2.4%of thcvariance.Overall,thisrcgrcssionrnodelexplainedl3%ofthe

Table 9: Hierarchical regression analysis of Sport PA and the Unam biguousFeedback dimension ofF lowcontrollingforsocio-demographicsandmotivation

Table 10: I-lierarchical regression analysis of Sport PA and the Concentratioll on the Task at Hand dimension of Flowconlfolling for socio-demographics and motivation

Table 11: Hierarchical regression analysis of Sport PA and the Senseof Control dimension of Flow controlling for socio-demographics and motivation

computed (Table 12). Results from step I indicalcd thalspon physical aclivitywasnol significantlyassociatcdwith gendcrorage.Rcsuhsfromstep2 indicatcdthat sport physical aClivitywas positivelyassocialcd with motivation (β =.330.p < .0I.)and explainedIO.4%ofthcvariance. Rcsults from stcp 3 indicatcd thai spon physical activity was not significantly associated with the LossofSclf-Consciousncssdilllcnsion of now and did not cOlltributc anything to thc explained variance. Overall. this regression lllodcl explainedIO.9%ofthc totalvariancewilhin sportsparticipation

Table 12: Hierarchical regression analysis of Sport PA and Ihe Loss of Self-Consciousnessdimensionof Flowcontrollingforsocio-dclllographicsandmotivation

To determine the relationship between sport physical activity participationandthe

computed (Table 13}. Results from step 1 indicated that sport physical activity was not significantly associated with gender or age. Results from step 2 indicatcd that sport physical activity was positively associated with motivation *(jJ =.345. p* =.001) and explaincdll.2%ofthevariance.Resultsfromstep3indicatedthatsportphysical activity was not significantly associated with the Transfonnation ofTime dimension of flow and did not contribute anything to the explaincd variance. Overall. thisrcgressionmodel cxplaincdll.9%ofthetotalvariancewithinsportsparticipation

Table 13: Hierarchical regression analysis ofSport PA and the TransfornmtionofTime dimcnsion ofFlowcontrollingforsocio-dcmographics andmotivation

14). Rcsults from stcp 1 indicated that sport physical activity wasnotsignificantly

waspositivclyassociatedwithmotivation(jJ =.327. p < .0 I)and cxplainedlO. I%ofthe

variancc.Rcsuhsfromstcp3indicatedthatsportphysicalactivitywasnotsignificandy

Table 14: I-lierarchical regression analysis of Sport PA and the Autotelic dimension of Flow controlling for socio-dcmographics and motivation

Participants were divided into two groups (acliveand lessaclive) based onlhe TOlalPhysiealAclivityscores(forrespondentswith completescorcs)bcingbclowund abovethe50th percentile.Respondcntsinthelessactive!sedcntarygroup(n = 42)on averagescored5.46(SD = .517;SE = .080)onthe Total Physieal Activityindex(1 = sedenlary.15 = highlyactive)andscoresranged from4.13t06.13. Respondents intbe activegroup (n = 42)onaveragescored6.99(SD = .54 1;SE = .084)onthe Total Physical Activity indcx and scores ranged from 6.25 10 8.38

respondents, a series of independent t-tests were computed. GrollpdifTcrcnceswere

The assumption of normalily wasdelcrmined wilh the Kolmogorov-Smirnov lesl (Field. 2005). Levene's lesl fortestinghomogeneilyofvariancewasperformedtodelermineif

illustraleslhe resullsoflheseassumplion lesls as well as lhe descriptivestatislicsandt. tesls. According 10 lhe Kolmogorov.Smimovnormalilylesl, lhefollowingOow

participanls(D(J8) = .15,p < .05)andaclivepartcipanls(D(40)=. 159, p < .05);Clear

Goals forlessaClive participants(D(38)= .203.p < .001)andactive participants(D(40)= *142, p < .05);* Unambiguous Feedback for active participants *(D(40)* = .184, *p* < .01);

Transformation ofTime foractive participants(D(40)= .147.p < .05); and AlltotelicTolal foractiveparticipants(D(40)"" .146.p < .05). According to Levene's TesLLossofSelf-Consciollsncss was Iheonly nowsubscale that violated Ihcassumptionofl-Iomogcneity ofVariance(F(l. 76)= 4.962.p < .05)amongaclive versus less active participants. The highest to lowest now subscale t0lals for active participants wercas follows: Autotelic.

MergingofAclion and Awareness, Concentration on Ihe Task at Hand, Transformation ofTime and Loss of Self-Consciousness. The highest to lowest now subscale tOlals for less active participants were as follows: Sense ofControl. Aulotelic, ClearGoals. Unambiguous Feedback, Challenge/Skill Balance. MergingofAction and Awareness,

Table 15: Descriptivc Statistics and T-Tcstsof Active versus SedentaryExcrcisc Participants in the Reporting of Flow

		K-S $D_{(df)}$	n	*M* (*SD*)	*SE*	K-S $D_{(df)}$	n	*M* (*SD*)	SE	$t_{(df)}$
		078$_{(38)}$	38	32.0 (4.72)	.77	10$_{(40)}$	40	33.6 (4.18)	.66	
		159(31)'	41	3.6 (.59)	09	15$_{(40)}$*	41	3.9 (.59)		
		109(JI)	42	3.6 (.56)	09	12$_{(40)}$	41	3.5 (.63)		
		203$_{(38)}$***	41	3.9 (.75)	12	14$_{(40)}$*	42	4.1 (.57)		
		136$_{(38)}$	41	3.7 (.71)	II	18$_{(40,.\cdot}$	42	3.9 (.63)	10	
		II 8$_{(38)}$*	42	3.3 (.85)	13	18$_{(40)}$***	41	3.5 (.68)	II	
		117$_{(38)}$	42	3.9 (.71)	11	11$_{(40)}$	41	4.0 (.65)	10	
		111$_{(38)}$	42	3.2 (1.08)	17	13$_{(40)}$	42	3.3 (.81)	13	
		131$_{(38)}$	41	3.3 (.66)	.010		42	3.3 (.88)	*14*	
		134$_{(38)}$	42	3.9 (.80)	.12		41	4.2 (.62)	10	

comparedto lessactiveparticipants(M = 32.0, SD = 4.72)experienccd a higher Total Flow suggesting that active participants may experience more flow during physical

Again,althollgh not statistically significant, active participantscompared to less active participants rcportcd greater flow among the followingdimcnsions Challengc/SkillBalance.ClearGoals,UnambigliousFeedback,Concentrationonthc

This suggests that active exercise participants, compared topeopie who adhere to less exercisc, may participate in more physical activities thatmatchtheircurrentskilllcvel; set clearer goals prior to physical activity participation; are more aware of theirprogrcss in physical activity; and during physical activity participation may havc bcltcr concentration, expericnce higher levels ofcontrol, only focllson activity participation and are not preoccupied with other lInrclated thougbtsand experience an alter in time Less active participants reported greater Merging of Action and AwarenessandLoss

= 3.6, SD = .56)compared to active participants(M = 3.5, SD = .63) experienced a higher

active respondents, a series of independent t-tests were computed. GroupdilTerences

investigated. The assumption of nomlality was determined with the Kolmogorov·Smimov lesl (Field, 2005). Levene's test for testing homogeneity of variance was perfonned 10 determine if the variance between lhe two groups was roughly equal (Field, 2005). Table 16 illustrales the resultsoflhcse assllmption testsaswcllasthcdescriptive statistics and t·teSlS. According to the Kolmogorov-Smirnov normalitytesl thc following nowsubscaleswcrenotnormally distributcd: lnterestlEnjoymcntforactiveparticipants (D(42)= .161,p < .01); Competence foractiveparticipanls(D(42) = .166, p < .01); Appearancefor lessaCliveparticipants(D(39)= .201, p < .00I)andforactive participants (D(42)= .155,p < .05); andFitncssforlessactiveparticipanlS(D(39)= .202.p < .OOI)and aCliveparticipants(D(42)= .184, p = .00I). According to Lcvcnc's Tesl. IntcrestlEnjoymcnt was the only motivation subscalcthat violated theassurnptionof Homogeneity of Variance ($F_{(1, 79)} = 8.039. p < .01$) among active vcrsus lcss aClive participants. The highest to lowest motivation totals for active participants were as follows: Fitness, InterestJEnjoymenl, Competence. Appearance and Social. The highcsl to

IntcrcstlEnjoyment, Competence and Social. Although tbe resulls werefairlyprcdiclablc

unexpecledrcsults. For instance, the highest motivator for both activeandlessaclive participantswasFitncsssuggestingthatalthoughactiveandless active participants do not participalc in the same amount ofphysical activity, they do participateinpbysicalactivity

for the samereason-mainly for health purposes. The second highest llotivatorsfor aCliveandlessactiveparticipantswere lnterestiEnjoymentand Appearance respectively Thus, people who arc l110rephysically active may tend to participate inmorephysical aClivities for their own pleasure whereas pcople who are less physically active may tend to only participate in physical activity ifthcyfecl lhey are physicallyunattractive.This finding suggesls that active participants experience more inlrinsic motivation with regards to physical aClivity in comparison to less active partieipants who appear to be more extrinsically motivated with regards to physical activity

Table 16: Descriptive Statistics and T-Tests of Active versus Sedentary Participants i the Reporting of Motivation

Flow Dimensions		Less Active/ Sedentary				Active				
	Levene`s Test $F_{(df1, df2)}$	K-S $D_{(df)}$	n	M (SD)	SE	K-S $D_{(df)}$	n	M (SD)	SE	$t_{(df)}$
Total Motivation	.029 (1,79)	.112 (39)	39	5.2 (.83)	.13	.105 (42)	42	5.6 (.82)	13	2.32 (78.41)
Interest/enjoyment	8.04 (1,79)**	.106 (39)	41	5.0 (1.41)	.22	.161 (42)**	42	6.0 (.83)	.13	3.89 (64.49)
Competence	.801 (1,79)	.122 (39)	42	4.9 (1.26)	.19	.166 (42)**	42	5.9 (1.17)	.18	-3 52 (81·54)
Appearance	1.14 (1,79)	.201 (39)***	40	5.7 (1.26)	.20	.155 (42)*	42	5.7 (1.30)	.20	.071 (80)
Fitness	.049 (1,79)	.202 (39)***	42	6.2 (.86)	.13	.184 (42)***	42	6.4 (.69)	.11	-.87 (82)
Social	1.50 (1,79)	.105 (39)	39	3.9 (1.37)	.22	064(42)	42	4.1 (1.68)	.26	-.66 (79)

* = $p < .05$; ** = $p < .01$; *** = $p < .001$

According to the IndepcndentSamples Tcsts, activeand lessactiveparticipants differed significantly different in terms of Total Motivation ($t_{(78.41)}$= -2.32, p < .05;

The purpose ofthis sludy was lodetemline whether or n0l people are experiencing tlow during exercise participation as well as people's motivesfor exercising. The research questions were as follows: (1) Is there a relationship between tlowexperienced by exercise participants, mOlivation to exercise, andexercise adherence?; (2) To what extent is tlowassociated with exercise adherence?;and (3) What are thedifferences(ifany)in flowexperiencedandmotivationto exercise among active versus less active participants? The following scctions will discuss lhefindingsoflhis study as well as deliberate to the possible reasons for the results and their implication in sports and physical activity research and praclice. The limitalionsoflhestudywill then

This study uncovered some interesting resuhs regarding gender, tlowand motivation.lntermsoftherelationbctweengenderand flow,gender was significantly positively related with theChallcnge/Skill Balanccdimensionoftlow (small etTect size) suggesting lhat males may participate in physical activity where the challenge meets their cUITent skilllevel. Also,gendcrwassignificantlypositively related with Total Flow (large effect size) meaning thaI males experience more tlow in comparison to females

during physical activity participation. Participants in this studywerenon-randomly selected and the majority ofmales participated in bigherintcnsitypbysicalactivities.That is, the majority ofmales in this study reported playingbasketball and other highly sport·orientedactivitieswhilethemajorityoffemalesreportedparticipatinginaerobics. walking, clcaningand other medium intensity activities. Therefore. in thecurrentstlldy, males and femalesparticipatcd in two difTerent categories ofphysical activity. Thc challengeofanactivitycorrclatingwithyourcurrentskillleveI is important in higher intensity physical activities but may not be as important in less intensephysicalactivities Tbus, in the current study. malcs and females were not homogeneousintcrmsofthe intensity oftheir most freqllcnt physical activitics which isa potential explanation for the

Several studieshavc investigated genderdiffcrcnces in thccxperienceofflow among varsity athletes or in the participation ofspecific intensephysicalactivitics. Thus, in these studies, males and females are both participatinginhigh-intensesport-related physical activities. For example. Hall etal., (2007) conducted a sludy to cxaminc flow cxperiences foJ[owinga variety ofoutdoor activities that were part ofa study·abroad course. Ninctycollege sludents(55 females, 35 males; mean age = 20.30 ± I.04years) participated in thisstlldy whilc studying abroad in Australia for3weeks.Participants compleledthcFlowSlateScale-2(Jackson&Eklund,2004)aftcrthc completion ofthree days ofactivities (rappelling (the controllcd descent down a rope).canyoningand snorkeling). These results were then compared with the means publishedbyJacksonand Eklund (2004) for exercise and sport activity. The mean flow score was higher for the

canyoning;andM = 4.16 ± 0.49forsnorkelingwhencomparcdwith scores reported for exercise(M = 3.78 ± 0.53) and sport activity (M = 3.78 ± 0.50). Similarresultswere

Interestingly, thcrc were no genderdiITcrences in temlsofflowcxperiences. Thus. the experiencc of flow may beafTectcd morcby the type of physical aClivityoneparticipates inrather thangenderdifferences inthese perceptions. Outdoor recrealion,sportsand olherhighly intensephysicalactivitics mayafford theexperience of flow more than

Genderdiffcrenccs in the experience of flow during physical activitywercalso not evident in a study conducted by Russell (2002) which examined qualitativeand quantitativc aspecls of flow within a group of 42 college-age athletes(I5femalcs.27 males, mean age = 20.43) representing team sports (i.e., football,baseball. volleyball softbalt and basketball; n = 28)andindividual sports(swimming,track, wrestlingand triathlon; n = 14). Thcathleteswcreinlerviewcdaboul whatfaclorsthcyfclthclped, prcventedanddisruptcdflowoccurrcncc, Resultsofthesludyindicatednon-significanl gender by sport intcruclionsand non-significant main elTccts forthe majorityoftheFlow

there was a significant maineITect for sport sctting. indicatingthat team-sport athletes havca significantly higher level of Aclion-Awareness Merging thcnindividualsport

activity)subscale,thereweretrendstowardssignificanceonthe gender and sport main

tlow faclorssimilarly. regardless of gender or sport setting. Therefore, althoughlhe current study found that males have higher tlow levels than females, other studies did not find gender differences. It is unclear in Ihis study whethergenderdifferences in reporting oftlow was due to real gender differences in optimal experiences. gcnderdifTerencesin lhe type of physical activity participation or simply a sample bias

The current study also found gender differences related to motivation to participate in physical activity. Gender was significantly positively related to lhe InterestiEnjoymentand Competence (participating in physical aclivityto betteronescll) motivation subscales suggesting that males participate in physical activity for their own interestienjoymentandtoimproveoll lheirown knowledge/skiJlbase.According lo Dunning (1986),sports serve as a secondary reinforcer of mascuIine identity which may explain whymalesmayparticipateinphysicalactivitytobetterthemselves. Gender was also significantly positively associated with total motivation (mediumefTectsize) suggesting that males experienced greater levels of motivation to be physically active This is in contrasl to other studies exploring the role of motivation in exercise adhcrence which did not find any gcnder dilTerences (Rodgers el al., 2002; Ryan el al.,1997) However, Kilpatrick ct aI., (2005)conducled a swdy to compare motivationsforsport participation versus exercise among college students and it wasdctcrminedthatmales hadhigherlevelsofmotivalionforchallenge,competition,socialrccognition,strength and endurance in comparison to fcmales. Similar to the experienceoftlow,molivation

may also berclated to the lypeofphysical activity one participates in (Kilpatrick etal., 2005). Aspreviouslydiscussed, the males in the current studyreporled participating in physical activitics with a higher intensity which may suggesl why their motivation levels were higher. Thus, although the current study found that maleshave higher motivation levels than fcmales, the gender difTerencescould be the result 0 fgender difTerenccsin the type of physical activity participation or lhc non-random sampling technique employcd resulling in non-equivalent groups in terms oflhe type of physical activity participation

This study also uncovered results rcgarding age and flow. Researchonthcinverse relationshipbetweenageandphysicalactivityparticipationiswell documented (Sallis. 2000). The current study supports this relation asagc wassigniftcantlynegatively associatcdwithTolal PhysicaIActivity(mcdiulllefTectsize)meaning that as agc increascd,physicalactivitydecreased.Agcwasalsosigniftcantly POSilively related with Challenge/SkiIIBalance(llleduilllefTectsize)signifyingthatasage incrcascd,sodid the ability to ftnd activities that met the skill level of the individuaI participant. As onc gets oldcr, sclf-awarenessmay increase and lhus the ability to match 5kill level with the challenge of an activity. Thus, the ability to ftndactiviliesthat match ones skill level may increase with age. Seongyeul (1988)conductcd a study to investigatethe relationship betweenlifcsatisfactionandthcnowcxperienceamongoldcraduIts. The respondents

potenlial changes may impaci physical activity adherence across the Iifespan

work), (2) Sport Physical Activily(Sport llA; participation in sportlphysical activily)and (3) Non-sports leisure (Leisure PA; physical activity during transportation and in daily life). Leisure PA was significantly positively associated with MergingofActionand

significantly associated with motivation in termsoftbe relationshipbetweenphysical activity and the motivation sub-scales. Witb regards 10 physicalactivitybeingassocialed

found in this study. Interestingly, Sport PA was found to be not significant with Total Flow. Also. Total PA didn't appear to have any relationship to flow. Reasons for this

not always be interest or enjoymcnt in those types of activities. However. Total PAwas

significantlypositivclyassociatedwithcleargoalsinphysicalactivity(small clTectsize)

physical activity participation in leisure. This suggests that clear goals in physical activity may be more evident in higher intensity levelsofsportlphysical activity conceivably due to the competitive nature of sports. Additionally, it"spossiblethat anactivitymust possess a certain element of challenge in order 10 permit individualsloexperiencetbe state of flow; activities during Work PA or Leisure PA do n0l possess such a challenge (e.g., walking). Also, since this sludy was conducted among the general population of physically active people, it is possible that the flow experience isonly present among

actively trying to exert control). Loss of Self-Consciousness (only concccmis participating in the activity and nothing elsc) and Transfonnation of Time (altering of

experiencc these charactcristics. As participants in this study participatcd in physical

flow. Thesc rcsults suggest that)'ou necd not ncccssarily need a high levcI of motivation

motivation toparticipatc in sports physical activity as opposed to ieisureorworkphysical activity. This result is not unexpected considering that LeisurePAmcasuredpeoplc's physical activity icvels in transportation and in their daily lives while Work PA was concemcd with physical activity received during a work day. Peoplc are more likely to report high levels of intrinsic motivation as a result of sport and physical activity participation when they likely experience rushesofcndorphins. Additionally.endorphin rushes are auributed to the Oowstate (Marr. 2001) and peoplc who are imrinsicallyas opposed to extrinsically motivatcd tend to experience now more frequently.Forexample. Tsorbatzoudisetal..(2006)conductedastudyaimedatinvestigatingtheefTectof motivational dimensionsproposcd by Pellelier. ct aI.. in 1995. both on sportparticipation levcls and on inlcntion for continuing participation among adult recreationalsport participanls.Simiiar tothecurrcmstudy.Tsorbatzolidisetalprovidcdcvidenceto suggesl thalincreasedmolivationleadstoincreascdparticipation. Hamer. Karageorghis. and Vlachopouios(2002) havc reported that inlrojected regulation(toattainoravoidan outcome (Bcallmont. 2009» and identified rcglliation (doing something that was pcrsonallyimportant (Losierctal., 1999)were thconlyprcdictorsofexcrciscdependence among endurance athlctcs, whereas intrinsic motivation (thcinhcrcnt tcndcncytoseek out novelty and challcnges, to extend and exercise one'scap<lcitics. toexplorc. and to lcam (Deci & Ryan, 2000) was shown to have no relationship Wilh excrciscdependence Sport participaiiollOna regular basis has bcen ShOWll to have positivc cfTectson physical heahh(Dishman.1988;Martin&Dubbcrt. 1982:PafTenbcrgcr&Hyde. 1988: l)afTcnbcrgeretaI..1986:Siscovicketal.. 1985:Slcphensetal.. 1985): psychological

physical activity. it is no surprise that Clear Goals significantly prediclcdle\'c1sof

Dispositional FlowScale-2 which will further be discussed in Ihe limitationssectionof

the sludy. However. it is my opinion Ihat Ihesample utilized in this study was lhe primary

the SOlh pcrcenlile. Thi s study conducted a series ofindcpendenl Hcsts to detennine

as stated previously. Therefore. although there is ∪ slight dilTercnce in the umountof physical uctivity among the two groups. both groups feel intcmally drivenundexperience enjoymcnt during participation in the activity as well as the activity

The Experienee of Flow and Motivation Among Acti" e versus Less Activ e

This study conducted a scries of independent H ests to dctennine difTerencesin motivation experienced among active versus Icss active respondents. Resultsfoundno significam difTcrcnccs among the reporting of motivation (total of the fi"csubscales) to physical activity participation. Although there have bccn many studies conducted on the subjectofexcrcise relapse. success in amcliorating long·tenn maintcnanccofphysical activity hasbccn minimal (Dishman. 1982. 1988a. 1988b: Murtin& Dubbcrt. 1982. 1984). This is likely duc to the fact that mosl cxcrcise programs are designcdfor

subslantial portion ofthc North American populationcan beclassifiedas inactiveor scdentaryandwhopossibly havenointent incommcncingexcrcise(Prochaskaet al., 1994). Consequently. elTectiveintcrventions must be directed tothe needs of the scdentary population (Prochaska & Marcus. 1994). Therefore. this may explain the insignificant motivation resuhs for less active participants. The current study found that Total Motivation and the five motivation subscales wercall significant in temlS of the

participate in exercisemaynotbereprcsentativeofactualmolivalionstoexercise but

significanl reasons for participation in sport. Simi larly. itwasdetcnnined in this study

sport participation has been detemlinedto have substantial cffectson exercise adherence (Wankc1.I993).Therefore.itis not surprising lhatthe lntcrestlEnjoymentsubscalewas highly significant for aclive participants. Reasons for this rcsultcould be due to the fact thatifyouparticipateinasufficientamountofphysical aClivityto bc considered an

imperativcductothefactthal ifyouplantoparticipate in a highamoUlltofphysical

Although this study had many posilive aspects l0 it. it also had many limitalions

Oow,motivationandphysicalactivitylcvelscouldllotbedctcmlined. It was difficult to

representative of the population of exercise and non-exercise participants in St. John's

Using the Dispositional FlowScaJe-2 (Jacksonel al.. 2002). a scale which

now experiences in chosen physical activities and in general also caused problems for thissludy.Asitischallengingtoquantitativelymeasurenow. thequestionnairemay have been difficult to comprehend as questions dealt with highly psychological aspects Additionally. it isdifficulttorccall past now experiences as it is primarilyan"inthe momenl" experience. It is believed thai usinglhe Experience Sampling Method to measure the now experience would havebcen more appropriate as thisscale aims to measure physical activity in daily activities. Additionally. this study may have benefitcd

points that should betakcn into consideration for future rescarch. This study addressed three questions: (I) Is there a relationship between nowexpcriencedbyexercisc participants. motivation to exercise. and exercisc adhercnce?; (2) To what extent is now

Althoughthisstudyexaminedrclationshipsbetween Oow.lllotivalion and physical activily. it may beof intcrest to fulure rcsearchers 10 examine what typeofmotivation (inlrinsidextrinsic) inOuences cxercisc adherence the most. Also. considering thaI the

majorilyofthc people in this sludywere from St. John·s. NL. As Newfoundland hasone

provinces, Therefore, it issliggestedthat fulllre studies condlIclthisstudy indifTerent provinces lhroughout Canada.Finally,it is recommended lhatsludies becondllctcd with largcr,random andmorc hctcrogcneoussamples inorder lo fllrthcr cxplorelhe

How docs one achieve this uniquc condilion of now? Unfortunatcly. the answer is ascomplcx as thc Iheory ilself. Duc 10 now's highly individualizcd nature.onlygeneral guidclinesare capable of being provided and il is howlhc individual interprclsanduses the guidelines that will detennine the likely occurrence of flow. The foilowing section aims to provide an undcrstandingofthesc guidelines and ilspractical implications

In order 10 experience now. we must firsl be able 10 control (tosomedegree)our

ofdilTerentiatingamongavarietyofslimuli,choosecertain stimuli andfocusselcclively

Csiks7..cntmihalyi,1988.p.17).Additionally.consciousnessis largcly prcsent when

bappens. Ihc questioning ofonc's adequacy is absent; howeverwbcnonedoesstopto Ihinkabouteself,positivefeedbackisoverwhclming.Conscqllcntly, we need to be able to control whal we consciously perceive by only payingaucntion 10 rclcvanlstimuli which iscongrllent with our goals. For example. an individual piuying Icnnis should try loconlrol thcir thoughts and not think about anything negativc 5lIch as losing thc match It is the abilil)' 10 choose and select infonnation lhat is posilivc and congruenlwilhour

goals that we are able to take control of our consciousness and are more likely to experience Oow. thus improving thc overall quality of our lives (Csikszentmihalyi. 1990)

Making External Conditions Match our Goal

A second strategy in auempting to achieve now is attempting to make cxtemal conditions match our goals. Forinstancc.ifwcbelicvcthat intelligcnce isan important componcnt to our happincss. we may support local education institutions or read more educational tcxts in order 10 gain intelligence. Ifwc are unable tointrinsicallycrcatc conditions to match our goals. we must attempt to modify external conditions.Ourgoals are then directly projected intoourcxternal conditions (Csikszentmihalyi.1990.p.43) For example. ifthe individual playingtcnniswantsto hit 5 balls overthenct.theywill position themselves propcrly and swing thcir racquet cITcctivcly in ordcr to do so J-lowcver, ifwe cannot changeourextcmal conditions. we must modifyourselves

Changing our Experience of Exlernal Condilions ltnd Better Goals

Keeping in line with the previous example. ifwe are able to modify what we mean by intelligcncc, thcn wc learn to understand thatachicving intclligcnce is not alwayspossibleandthatnotachievingultimatcintclligcncewillnot likely make us unhappy (Csikszcntmihalyi. 1990). Thcrefore. it is the ability lochangehowwewill

cxperiencesomclhing lo makeitinlincwith ollrgoalsthal wcdcvelop a scnse of happiness. The followingscction will discusssomcspecilicactivilyguidelinesin tcnns of motivation. maintainingappropriatc focus. optimal arousallrclaxationpriortothe

Todoanythingwellacertain lcve!ofmotivationmustexist.lndividualscanbe motivated fora number of reasons. whcther Ihey are forpcrsonal rcasonsorare largely

flow as the morc \\e arc motivated to do somcthing. the morc likely we will be succcssful (Weinberg & Gould. 2003). During the activily. developing a narrow focus and staying inthcprcsenlarecriticalcomponentsloachicvingflow(Wcinberg&Gould.2003).We mustbeabletodismissanythingextemalandjustfocusonlhcpresentcomponenlsofthe activity as complctc concenttalion will aid us in achicving flow. Thercforc. thisrequires much mcntal activity. While some activities rcquire yOll to be relaxcd. others may requircyoutobc thcopposite. Ourpsychologicalprcparation willplayagreat partinour ability to achieve success in an activity. Activitiessllch as prc-match and pep talks are important foranathlcte prior to a match. Whatever Ihc activity. appropriatemcasures such as thcamollnt and type of skill rcquired should bc lakcn into considcration (Weinberg & Gould. 200J). Finally. conlidencc and a posilivc mcntat attitudcarc salient factors. regardless of the person's abilities. Belicving that you can succcedalldmccithe challenges at hand can creatcasenseofcontrol amongst thc individual. which in tum mayleadtooptimalexpcriences(Weinberg&Gould.200J.p.146).Thercfore.

havc a strong relalionship wilh physical aCli vityadhcrcncc and lhcrcforc.did nolhavc

bea highly psychological statc Ihal is perhaps a statc almost cxd usive to highly

this study were rcpresentalive ofthc gcncral population of exercise peoplc. ilis quitc

likely that participants were not in a position tocxpcrience now. As this study was

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