

**Exploring the relationship between Physical Activity, Life Goals
and Health Related Quality of Life among High School Students:
a School Based Survey.**

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*This Master's Thesis is carried out as a part of the education at the
University of Agder and is therefore approved as a part of this
education. However, this does not imply that the University answers
for the methods that are used or the conclusions that are drawn.*

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Abstract

Background. Intending to increase participation in physical education (PE), two models are developed: “motion enjoyment” and “sport enjoyment”. The former focuses on health effects by being physically active and promoting good experiences in PE, while the latter emphasises athletic sport, activity skills, techniques and improvements of physical performance. The aim of the present study is to explore differences between the students selecting “motion enjoyment” and “sport enjoyment”. Additionally, it sets out to examine if life goals and self-reported physical activity are associated with Health Related Quality of Life (HRQOL).

Method. One-hundred and eighty-one high school students (median age 17), 141 girls and 40 boys were included in this cross-sectional study. HRQOL was measured using KIDSCREEN - 10, and life goals by Adolescents Life Goal Profile Scale (ALGPS). Independent sample t-tests, chi-square and one-way ANOVA were applied to compare students in the two directions in PE. Multiple regression analysis was used to explore if life goals and self-reported physical activity are associated with HRQOL.

Results. Self-reported physical activity level and HRQOL is higher among the students in “sport enjoyment”, while perceived importance of life goals remained the same regardless of model preferred within PE. Multiple regression analysis revealed that only `attainable achievements-oriented` life goals with the independent variables `age` and `model in PE` were associated with HRQOL. Exploring the relationship with self-reported physical activity; only `like PE` with the independent variables `age` and `vocational programs` were associated with HRQOL.

Conclusion. Self-reported physical activity habits and life goals are limited associated with HRQOL. The experience of life goals explore another aspect to individual than HRQOL. Exploring HRQOL and life goals is an important contribution for public health in order to increase subjective well-being among adolescents.

Keywords. Adolescents – High school - Health Related Quality of Life - Life Goals - Physical Education - Physical Activity

Sammendrag

Bakgrunn. For å øke deltakelse i kroppsøvfingsfaget ble to modeller utviklet:

«bevegelsesglede» og «idrettsglede». Den førstnevnte har til hensikt å gjøre studentene bevisst på positive helseutfall ved å være fysisk aktiv, og å fremme gode opplevelser i kroppsøvfingsfaget. Den neste fokuserer på atletisk sport, aktivitetsferdigheter, teknikker og forbedring i fysiske prestasjoner. Målet med studien er å utforske ulikheter mellom studentene som velger «bevegelsesglede» og «idrettsglede». I tillegg ser en om livsmål og selv-rapportert fysisk aktivitet er assosieret med Helse Relatert Livskvalitet (HRLK).

Metode. 181 studenter i Videregående skole (median alder 17 år): 141 jenter og 40 gutter, var inkludert i en tverrsnittstudie. HRLK måles ved bruk av KIDSCREEN-10, og livsmål måles ved bruk av Livsmålsskala (ALGPS). Independent sample t- test, kji-kvadrat og one-way ANOVA ble brukt for å sammenligne studentene i de ulike gruppene i kroppsøvfingsfaget. Multiple regresjons analyse utforsker om livsmål og selv-rapportert fysisk aktivitet er assosiert med HRLK.

Resultat. Selv-rapportert fysisk aktivitetsnivå og HRLK er rapportert høyere blant ungdommene i «idrettsglede», livsmålene er like viktige uavhengig av foretrukket modell i kroppsøvfingsfaget. Multippel regresjonsanalyse viste at graden av oppnåelse av livsmålet `prestasjon`, sammen med de uavhengige variablene `alder` og `modell i kroppsøvfingsfaget`, var assosiert med HRLK. Da forholdet mellom selv-rapportert fysisk aktivitet og HRLK ble utforsket, viste det seg at `graden av å like kroppsøvfingsfaget` sammen med de uavhengige variablene `alder` og `yrkesfaglig utdanning` var assosiert med HRLK.

Konklusjon. Selv-rapportert fysisk aktivitet og livsmål viser en liten assosiasjon med HRLK. HRLK og livsmål utforsker ulike aspekter i individets liv. HRLK og livsmål er svært viktig bidrag i helsefremmende arbeidet for å øke subjektivt velvære hos ungdommer.

Nøkkelord. Fysisk aktivitet - Helserelatert Livskvalitet – Kroppsøvfingsfaget - Livsmål - Ungdom – Videregående Skole

List of abbreviations

ALGPS	-	Adolescents Life Goal Profile Scale
HRQOL	-	Health Related Quality of Life
IBM SPSS	-	Statistical Package for Social Science
PE	-	Physical Education
QOL	-	Quality of Life
VIF	-	Variance Inflation Factor
WHO	-	World Health Organization

Part I

MASTER THESIS

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1.0 Introduction

The technological and industrial developments over the last century have enabled individuals to live more effective and comfortable lives, especially within the Western part of the World. Although there are vast advantages with these developments, a direct consequence is an increasingly inactive population. This is also evident among adolescents (Hallal et al., 2012). According to physical activity guidelines, 60 minutes of moderate to vigorous physical activity is recommended (Meld. St. 19, 2014 - 2015). Yet, this recommendation is only met in one of five adolescents aged 13 – 15 years (Hallal et al., 2012). Sedentary behavior has increased dramatically, especially concerning the time spent staring at screens: watching television, playing videogames, surfing the internet and so forth. Hallal et al. (2012) estimated that 68 % of girls and 66 % of boys aged 13 - 15 spend two or more hours per day watching television. Screen time and sedentary behavior is significantly important to adolescents' health, and it is associated with increased risk of mental health issues and higher body mass index (Biddle & Asare, 2011; Busch, Manders, & de Leeuw, 2013; Van Der Horst, Paw, Twisk, & Van Mechelen, 2007). Inactivity and declined physical activity level with age during adolescence is well known (Biddle, Atkin, Cavill, & Foster, 2011; Hallal et al., 2012). This trend is also evident in Norwegian adolescents (Anderssen, Kolle, Steene-Johannessen, Ommundsen, & Andersen, 2008; Meld. St. 19, 2014 - 2015).

The advantages of promoting physical activity among children and adolescents are well known. It is crucial to develop sustainable and beneficial habits at an early age in order to contribute to a healthy and physical active lifestyle sustained into adulthood (Engstrom, 2008; Telama et al., 2005). The need for health promotional work expanded as a consequence of WHO's 1948 change of their definition on health: moving away from a pure medical characterization towards a more salutigenetic approach to health (Antonovsky & Lev, 2000), health became defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). This modified definition included both a psychological and a social dimension, a development which gave rise to a promotional approach in order to improve public health (Bircher, 2005). Alongside this modification to health, the school of positive psychology highlights the human strength to cope with ill-health (Seligman, 2011; Seligman & Csikszentmihalyi, 2000). Although individual actions and intentions are essential, it is important to consider the environmental and external influences

affecting individuals` capability of engaging in healthy behavior. The importance of increasing knowledge regarding the interaction between individuals and the society they live in was highly stressed during the Ottawa Charter Conference in 1986 (WHO, 2009). Society has a responsibility to facilitate a choice to be physically active, not only because it is healthy, but enjoyable, affordable, safe, convenient and valued (Hallal et al., 2012). The Norwegian government explicitly confirmed this challenge in 2012 by preparing a statutory provision through “Law on Public Health”. The purpose of this Act is to “promote public health, well-being, social and environmental conditions and help to prevent mental and physical illnesses, injury or suffering” (own translation:04.17.2015) (Helse- og omsorgsdepartementet, 2012). The wording of this policy mirrors WHO`s definition of health, and thus indicates that the 1948 definition is still recognised as valid and utilised as a guideline in the making of contemporary public health policies.

The increased need for promotional work is explicitly displayed in current policymaking, especially within the Western society, which increasingly faces the global trend of high prevalence of diseases associated with inactivity and unhealthy lifestyles (Meld. St. 34, 2013). The negative development of public health is a subsequent effect of social inequalities regarding education, employment and income (Allertsen & Jensen, 2014; Borgan, 2009). Public healthcare is increasingly focusing on diminishing the prevalence of cardiovascular disease, cancer, chronic obstructive pulmonary disease, diabetes, muscle- and skeletal disorder and overweight (Allertsen & Jensen, 2014; Lee et al., 2012; Meld. St. 19, 2014 - 2015). Moreover, the increased prevalence of mental disorders such as anxiety, depression, and behavioral difficulties, has also become a major health challenge. This trend is also evident among the adolescent population (Meld. St. 34, 2013). Albeit this development, health is not merely indicated by the absence of diseases. Self-reported experience of health can also function as an important predictor of well-being (Breidablik, Meland, & Lydersen, 2009). In the Norwegian population, 90 % of adolescents aged 16 – 20 report their health as “good” or “very good” (Breidablik, Meland, & Lydersen, 2008, p. 16). This may suggest that Norwegian adolescents possess a high level of good health.

1.1 Aims and Significance

Physical education (PE) teachers in Southern Norway expressed concerns about students at high schools who frequently did not participate in PE. The concern particularly involves

students attending vocational programs, programs which leads to future work life that require good physical health. Decreased participation in PE creates a challenge for the PE teachers in contributing towards healthy habits for the students. According to the curriculum in PE, the primary motivation is to inspire adolescents to a lifelong enjoyment of physical activity in all phases of life (Utdanningsdirektoratet, 2012). Intending to increase participation among students that do not appreciate sport and competitions, two models were developed; “motion enjoyment” and “sports enjoyment”. “Motion enjoyment” emphasised on promoting good experience in PE and make students conscious about positive health effects by being physically active. Within this model, technique and physical performance are less important. Instead, the focus is on health in general and it attempts to facilitate physical activity as a positive experience. The other model, “sport enjoyment”, represented athletic sports, activity skills, techniques and improvements of physical performance. Competitions and tests are important within this model.

The two models aim to increase the enjoyment in PE by facilitating two different directions. Furthermore, the models are constructed on diverse aspects of being physically active, intending to develop skills and abilities for future engagement. Nonetheless, as Katz and Assor (2007) point out, not all choices positively predict enhanced motivation, however, when a choice is offered in a way that meet the students’ needs (regarding autonomy, competence and relatedness according to Deci and Ryan (2000) theory) it increased learning, motivation, and well-being. Experience meaning in life is likely to play a protective role against poor psychological health and health risk behavior (Brassai, Piko, & Steger, 2011). Adolescence is a developmental period with psychosocial and somatic changes. Managing the processes of changing bodies and changing identities may lead to problems when coping with situations that impair Health Related Quality of Life (HRQOL) in adolescence (Goldbeck, Schmitz, Besier, Herschbach, & Henrich, 2007). Among a great many impact factors at this stage of age, the evidence indicates that an increased physical activity level is positively associated with HRQOL in adolescence (Klavestrand & Vingård, 2009; Spengler & Woll, 2013). Physical education should emphasize psychosocial benefits as the internal motivation to engage in a physically activity lifestyle is always central (Piko & Keresztes, 2006). Similarly, physical activity that is experienced as internally rewarding is more likely to be performed again (Pelletier, Fortier, Vallerand, & Briere, 2001). Understanding the underlying factors that cause inactivity can contribute to more effective evidence-based public health interventions (Bauman et al., 2012).

Unfortunately, a limited body of research describes and identifies adolescents that do not participate in PE. Hence, the primary motivation for conducting this research is to contribute with an improved understanding of the students favouring either “motion enjoyment” or “sport enjoyment”. The objectives of the present study are to explore differences between the students selecting “motion enjoyment” and “sport enjoyment”. Additionally, it sets out to examine if life goals and self-reported physical activity are associated with HRQOL.

1.2 Sections

This thesis is divided into three parts. The first part intends to provide a full understanding of the concepts utilized in the theoretical framework and the subsequent literature review. Additionally, method and methodological consideration are presented. The results and discussion of results are excluded in this section but is discussed in the paper. Secondly, a draft of the paper to BMC Public Health is ready for submission according to journal guidelines. Thirdly, appendix with part of the questionnaire is attached.

2.0 Theoretical framework

2.1 Health Related Quality of Life (HRQOL)

Quality of life (QOL) is a subjective experience of being happy, satisfied with life, and the sense of living in balance (Helseth & Misvær, 2010). To narrow the multidimensional concept to health affection, HRQOL was introduced. This new direction explicitly integrates and narrow the concept down to a view of health perspective, and the effect of health, illness and treatment on QOL domains (Moons, Budts, & De Geest, 2006). Consequently, HRQOL aim to explore knowledge on QOL domains in physiological and biological outcomes. Furthermore, in contrast to these clinical characteristics, the subjective evaluation of overall well-being is central (Wilson & Cleary, 1995).

The theoretical model by Wilson and Cleary (1995) aims to develop a clear conceptual understanding, and distinguish concepts in order to visualize the central causal relationship. Measures of health is a continuum and contains of five levels; biological and physiological variables, symptom status, functional status, general health perceptions and overall quality of life (Wilson & Cleary, 1995). The conceptual model related to this study is the characteristics

of the individual (age, gender and high school programs), and the characteristics of the environment (social support, psychological support and high school context). Furthermore, the functional status assesses the self-reported physical activity behavior (engagement in physical activity and model in PE), and the general health perceptions integrates the concept HRQOL. Life goals integrate characteristics of the individual in regards to values and preferences. Biological and physiological variables, symptom status and overall quality of life is not included in this thesis.

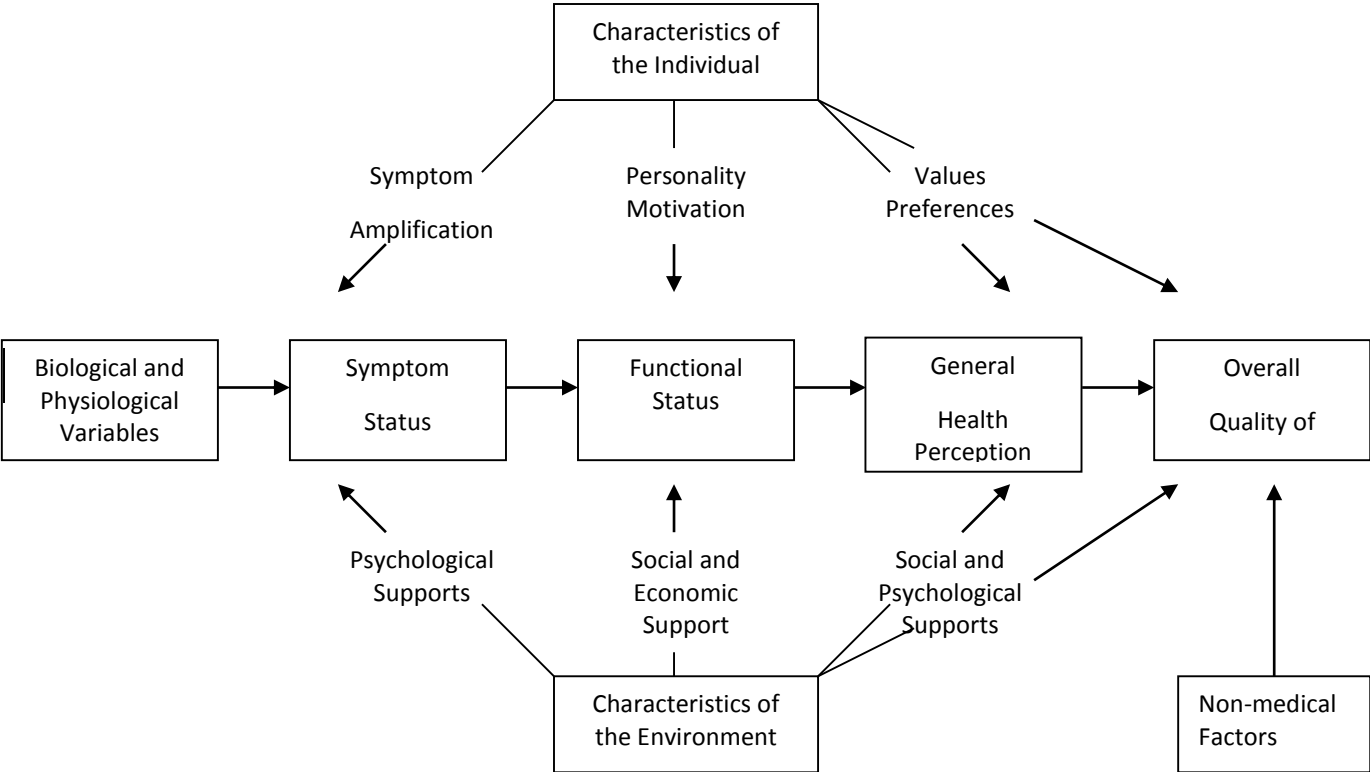


Figure I. Relationship among measures of students outcome in a health-related quality of life conceptual model (Wilson & Cleary, 1995).

The conceptual classification in Wilson and Cleary (1995) model is in accordance to Ravens-Sieberer et al. (2014) definition, which is fundamentally related to this thesis. HRQOL will here be defined as “a multidimensional construct covering physical, emotional, mental, social, and behavioral components of well-being and functioning as perceived by patients and/or other individuals” (Ravens-Sieberer et al., 2014, p. 792).

2.2. Adolescents Life Goal Profile Scale (ALGPS)

“Goals are essential components of a person’s experience of his or her life as meaningful” (Emmons, 2003, p. 107).

Goals signal what are considered as purposeful, meaningful, and valuable. This suggests that they have the strength to create a meaningful life. People spontaneously discuss their dreams, wishes, and goals when they are asked to evaluate what makes them happy (Emmons, 2003). According to Gabrielsen (2012, p. 11) “meaningfulness occurs when a given situation is experienced as congruent with the person’s goal and values”. It is through individual life goals decisions appear, and without them life would arguably lack purpose and structure. Although, a positive experience and a positive life can arise in the search of what kind of life goals matter. Other goals, however, do not contribute to a purpose in life; some may even be shallow and lack the capacity of creating meaning in life (Emmons, 2003). Similarly, McKnight and Kashdan (2009) highlights that personal goals do not always reflect a purpose, and will not necessarily describe personal value and meaning. The main purpose of goals is the arrival from the inner values, and explaining the good in a person.

2.2.1 The big four of meaning

According to Emmons (2003) there is a consensus on what is considered to classify meaning. The four main categories describing a meaningful life are: relationship, generativity, religion and achievement. These are often referred to as the “Big 4” of meaning making, and is adapted for adolescents by Gabrielsen, Ulleberg, and Watten (2012). Relation includes helpfulness, selflessness, relating to and trusting others. Generativity encompasses leaving a legacy, contributing to society and transcending self – interests. Religion includes believing in an afterlife, having a personal relationship to God and contributing to a religious community. Achievement includes being committed to work and its worth, and linking challenges (Emmons, 2003, p. 108).

2.3 Physical Activity

Physical activity is fundamental to physical, mental and social aspects of health among adolescents (Barnett, Cliff, Morgan, & van Beurden, 2013; Biddle & Asare, 2011; Lee et al., 2012). Being physically activity will here be defined as “any bodily movement produced by

skeletal muscles that results in energy expenditure” (Caspersen, Powell, & Christenson, 1985, p. 126). This definition includes physical activity and exercise that potentially increases physical fitness. Hence, the definition offers a clear distinction from what is understood as sedentary behavior. Sedentary behavior is not limited to screen time, but defined in this thesis as screen time concerning watching television, time spent at a computer, and playing videogames. Motivation towards a physically active lifestyle can be understood in a five stage psychological process: pre – contemplation (not ready to engage in physical activity), contemplation (getting ready to engage in physical activity), determination (ready to engage in physical activity), action and maintenance (Wester, Wahlgren, Wedman, & Ommundsen, 2008). The “Stage of Change” is the most popular method to describe and modify exercise behavior (Wester et al., 2008).

3.0 Background and previous research

This thesis` theoretical background and previous research is established on different combinations of concepts, and searches in databases: PubMed, Medline, Chinal, ERIC, Sportdiscus and Oria. Developing suitable searches and results, a combination of English words is used to cover and describe theoretical definitions and previous research. First, it is important to explore HRQOL aspects in adolescence, and the elements that influence the concept. The second aim is to define life goals, and describe adolescence in the search of these life goals. In a high school – based context, the third focus is to discover important aspects of adolescents` physical activity level and exercise habits. The concepts related to this study are `health related quality of life` and `quality of life`; `life goals`, `meaning`, `purpose`, and `engagement`; `intervention`, `high school`, `motivation`, and `dropouts`; `exercise`, and `physical activity`; and `adolescents`, `youth` and, `teenage`.

The theoretical framework includes evidence that is; relevant to problem presented, takes account for the age group, suitable for the Norwegian society, and presents a health promotional aspect. The focus of this study is on general adolescents, and consequently, articles focusing on athletics or on a specific kind of sport (football, swimming, basketball and so on) are thus intentionally excluded. Furthermore, the promotional aspect makes it possible to exclude studies focusing on specific diagnosis. All articles included in this thesis are written in Norwegian or English. Some books and references are of limited value, and

excluded in the presenting of current research. In order to include articles of relevance, emphasize was put on the applied methods and year of publication.

3.1 HRQOL in adolescents

Adolescence is a period of life with its own specific characteristics. In order to understand HRQOL in adolescents it is imperative to consider the group in isolation as they are neither children nor adults (Frisén, 2007). According to Frisén (2007), specific aspects of adolescents` HRQOL cover topics such as relationship, intimacy and sexuality, peer relationship, autonomy, and physical maturation. Asking adolescents directly about their health, and not through parents or peers, secures accurate subjective description of internal experiences (Riley, 2004). Several qualitative studies have explored what is and what matters in describing adolescents` own perceptions regarding QOL domains. Helseth and Misvær (2010) identifies adolescents` QOL as sustained by focusing on their psychosocial health, in particular by highlighting the need for a positive self-image, good friends, and good family relations. Furthermore, the study by Edwards, Huebner, Connell, and Patrick (2002) explored the themes adolescents consider to increase their QOL domains. The study highlighted recurring themes such as the positive relationships, school and learning, “belief in self”, feelings, general mood, participation, and engagement in activities. Knowledge on what increases health is a helpful starting point in recognizing needs that is required for positive experiences during adolescence. Consequently, this awareness makes it possible to identify vulnerable groups.

Previous studies indicate that increased physical activity is positively associated with HRQOL in adolescents (Klavestrand & Vingård, 2009; Spengler & Woll, 2013). Thus, a physically active lifestyle could be understood as contributing to, and potentially, strengthen mental well-being (Biddle & Asare, 2011; Whitelaw, Teuton, Swift, & Scobie, 2010). Younger children report higher HRQOL than adolescents. As age increases the HRQOL decreases (Cavallo et al., 2006; Haraldstad, Christophersen, Eide, Natvig, & Helseth, 2011b; Michel, Bisegger, Fuhr, & Abel, 2009). Boys and girls report similar HRQOL in younger age. However, HRQOL decreases more in girls compared to boys in transition to adolescence (Cavallo et al., 2006; Frisén, 2007; Haraldstad, Christophersen, et al., 2011b; Michel et al., 2009).

There are reasons to believe that within the school context it is possible to guide and promote HRQOL in adolescents. In order to improve and strengthen HRQOL, it is important to note indicators identified to likely impair HRQOL, such as: being bullied or being a bully, sensation of pain, negative body image, and overweight (Buttitta, Iliescu, Rousseau, & Guerrien, 2014; Dugan, 2008; Frisén & Bjarnelind, 2010; Haraldstad, Christophersen, et al., 2011b; Haraldstad, Eide, Helseth, Sørnum, & Natvig, 2011). These concepts, however, are not easily separated in adolescents' everyday life. In fact, they have a tendency to influence multiple domains within the concept of HRQOL (Buttitta et al., 2014; De Graeff-Meeder et al., 2005; Haraldstad, Christophersen, et al., 2011b; Haraldstad, Eide, et al., 2011).

3.2 Life goals and meaning

Goals are essential for all domains in life, some are conscious while other are hidden subconsciously. The pursuit of personal goals ought to satisfy personal and psychological needs (Deci & Ryan, 2000) and as Locke (2002, p. 311) points out "goals are the means by which values and dreams are translated into reality". Progressing toward goals, and identifying their importance, is closely linked to long-term well-being (Proctor, Linley, & Maltby, 2009). There is a consensus within the literature that higher experience of well-being among adolescents strengthen mental health and increases the perception of meaning in life (Ho, Cheung, & Cheung, 2010; Sveidqvist, Joubert, Greene, & Manion, 2003; Van Dyke & Elias, 2007).

When individual better understands their life, they can also handle it better. This represents a high sense of coherence (SOC), where meaningfulness is the most vital component to uphold strength in coping with a stressful situation, and needed when challenged with ill-health (Antonovsky & Lev, 2000). Notably, Jakobsson (2014) discovered that meaningfulness in sport is related with learning skills and the experience of constant development. Adolescents that continue to sense meaningfulness in regards to sports find competition as a challenging goal to look forward to (Jakobsson, 2014). Moreover, individuals engaging in exercise frequently appears to spend more time and value such goals to a higher extent than less frequent exercisers. Although these exercise goals are valued differently, time spent on goals that do not include exercise is valued the same. The individuals that participate in regular exercise views exercise-goals as both challenging and achievable. Their counterparts, on the other hand, perceived such management more interfering (Jung & Brawley, 2010). When

people experience purpose this will predictably affect motivation, mental health and well – being, in short: they live a healthier and happier life (McKnight & Kashdan, 2009).

Meaning and the search for meaning in life is stable over long period, and adolescents that experience meaning in life are likely to maintain this experience over time (Steger & Kashdan, 2007). The “Big 4” of meaning can influence individuals in the right direction (Gabrielsen & Watten, 2009). Perceived attainability of relation, generativity and achievement yield the strongest correlation with a range of QOL indicators. All life goals have a positive correlation to quality of life even if some are weaker (Gabrielsen et al., 2012).

3.3 Beneficial physical activity habits

The schools may play an important role in identifying students with low physical fitness. Additionally, they can encourage adolescents to increase their physical activity level, especially in regards to high-intensity activity (Ortega, Ruiz, Castillo, & Sjöström, 2008). Physical fitness is in adolescence considered as “a powerful marker of health” (Ortega et al., 2008, p. 1). In fact, a physically active lifestyle contributes to cardiorespiratory fitness, (Baquet, Berthoin, & Van Praagh, 2003; PAGAC, 2008), muscular strength (Malina, 2006; PAGAC, 2008), and enhanced bone health (K. J. MacKelvie, Petit, Khan, McKay, & Beck, 2004; Kerry J. MacKelvie, Khan, Petit, Janssen, & McKay, 2003; PAGAC, 2008). In a health promotional view, an inactive lifestyle can influence and increase risk of overweight (Dugan, 2008; Tammelin, Laitinen, & Näyhä, 2004), cardiovascular diseases (PAGAC, 2008), insulin resistant diabetes (Nolan, Damm, & Prentki, 2011), and some cancerous diseases (Vineis & Wild, 2013). Physical activity decrease with age (Gortmaker et al., 2012), and in general, boys are more active than girls (Bauman et al., 2012; Biddle et al., 2011; Hallal et al., 2012; Uijtdewilligen et al., 2011; Van Der Horst et al., 2007).

Research regarding the psychological factors and its impact on physical activity has highlighted a number of factors, which has the potential to modify behavior. Adolescents may benefit from perceiving a positive autonomous motivation, awareness of possible barriers to physical activity, self – efficacy, a positive attitude to exercise, higher perceived behavioral control and thereby creating a goal orientation that leads to action (Bauman et al., 2012; Biddle et al., 2011; Craggs, Corder, van Sluijs, & Griffin, 2011; Van Der Horst et al., 2007). Furthermore, social relationships seem to have an indirect influence on adolescents’ physical

activity level, especially the influence from family and support from friends (Craggs et al., 2011; Van Der Horst et al., 2007). The involvement in modelling and support from PE teachers, although their presence is limited to the school context, can lead to self-determined motivation and increased leisure-time activity (McDavid, Cox, & McDonough, 2014). Similarly, according to a review conducted by Van Der Horst et al. (2007), there was reported evidence for a positive association between physical activity and physical education/school sports.

Previous reviews show that high school-based interventions with focus on PE has a positive impact on screen time behavior, duration of physical activity level, but to lesser extent on physical fitness (Dobbins, Husson, DeCorby, & LaRocca, 2013; Kriemler et al., 2011; Mounesan et al., 2012). Boys seem to benefit from the interventions more than girls, and targeted interventions for girls should be offered (Biddle, Brehm, Verheijden, & Hopman-Rock, 2012; Camacho-Miñano, LaVoi, & Barr-Anderson, 2011; Slingerland & Borghouts, 2011). However, regardless of gender, Alderman, Benham-Deal, Beighle, Erwin, and Olson (2012) note that participation in PE contributes to meaningful levels of physical activity among adolescents, where increased numbers meet the recommended guidelines at the days PE is offered.

The degree of efficiency on physical activity later in life is still unclear, and longitudinal studies are limited (Kriemler et al., 2011; Slingerland & Borghouts, 2011). Nevertheless, the effectiveness of a multicomponent intervention is established. For instance, by including both high school and community or family probably generates the most effective outcome (Biddle et al., 2012; Camacho-Miñano et al., 2011; Kriemler et al., 2011; Mounesan et al., 2012; Slingerland & Borghouts, 2011). Similarly, Sallis et al. (2006) identify the need for an ecological approach to create active communities. Generate physical activity in a long-term perspective, physical activity should generate fun, enjoyment, satisfaction and interests in selected activity (Camacho-Miñano et al., 2011; Granero-Gallegos, Baena-Extremera, Pérez-Quero, Ortiz-Camacho, & Bracho-Amador, 2012). Similarly, Westergren et al. (2014) identifies the importance to design interventions that maximize competence, peer support, and enjoyment in order to increase physical activity.

3.4 Internal motivation

PE approach should improve the psychosocial benefits of physical activity because the internal motivation to engage an active lifestyle is always central (Piko & Keresztes, 2006). This is especially important as activities that are internally rewarding are more likely to be repeated (Pelletier et al., 2001). Students' internal and autonomous motivation contributes to an increased experience of well-being and HRQOL (Standage & Gillison, 2007; Standage, Gillison, Ntoumanis, & Treasure, 2012). Additionally, the pursuit of life goals is closely linked with increased well-being (Emmons, 2003; Proctor et al., 2009; Sheldon, Ryan, Deci, & Kasser, 2004). According to Deci and Ryan (2000), the understanding of human motivation are based on feelings of autonomy, competence and relatedness, which are considered to be three basic psychological needs for self-determined behavior. Previous research indicates that the self-determined motivation process in PE can lead to increased intention to be physically active in leisure time, and continue an active lifestyle continued into adulthood (Erdvik, Øverby, & Haugen, 2014; Moreno-Murcia, Huescar, & Cervello, 2012; Sanchez-Oliva, Sanchez-Miguel, Leo, Kinnafick, & Garcia-Calvo, 2014). There is a positive relationship between autonomous motivation, intention to exercise and exercise behavior (Stanley, Cumming, Standage, & Duda, 2012).

4.0 Method

4.1 High school based survey

Data were obtained from high schools where PE teachers had experienced low commitment by students participation in PE. Decreased participation in PE creates a challenge for the PE teachers in that they wish to contribute towards healthy habits for the students. Establishing healthy habits and experiences of good health in adolescence may have an impact for future employment participation, competence as parents, and thereby influence social health inequalities in population.

Norwegian high schools practice PE in a different ways, some focus on physical performance as the basis to evaluate interests and achievements in the subject. Intending to increase participation, the students that started at the vocational programs "Restaurant and Food Processing", "Design, Arts and Crafts" and "Healthcare, Childhood and Youth Development"

could choose between two different programs within PE; “motion enjoyment” and “sport enjoyment”. “Sport enjoyment” aims to develop competence in various types of sports. While “motion enjoyment” presents a new model inspired by development in the Academy of Ostfold, Norway (Husebye, 2012). In the development and implementation, the process tool, `Intervention Mapping` (IM) was used (Bartholomew, Parcel, & Kok, 1998). The two directions in PE aim to improve wide movement skills through awareness, challenges and coping mechanisms. The focus on health and well-being intends to encourage a physically active and health promotional lifestyle. For further use, it was essential to create a model that properly could be adapted to the high schools resources and requirements. The Norwegian high school system is rather homogenous, and the models can be applied to other high schools.

The first week at high school, the students received information through meetings and written notice about the different directions in PE. After six weeks, they had to decide which form of PE direction they wanted to partake in. The new directions started in the week eight.

4.2 Workflow

This master thesis was part of a larger longitudinal study performed from August 2013 to June 2014. The participants responded to a questionnaire in August 2013 (baseline) and May 2014 (post – test), and participation in the research was based on written consent. Data included several well-validated questionnaires. A research group connected with the University of Agder has performed the questionnaires, and decided which questions to be included in the questionnaire. Only a limited part of the total questionnaire have been utilized in this thesis.

4.3 Study Design

Baseline data in the intervention were used to answer the research question in this thesis, and the study has a cross-sectional design. The students received written and verbal information about the inequality in the two directions in PE before deciding.

4.4 Participants

The students from two high schools in Southern Norway participated in the study. The high

schools have almost 2100 students attending to general studies and vocational programs, and a total of 819 boys and girls started in the first grade in August 2013. The data used here was received from students attending the following programs: Restaurant and Food Processing (n= 58), Design, Arts and Crafts (n=60), and Healthcare, Childhood and Youth Development (n= 102). These programs were selected due to previous experiences of low commitment in PE at these vocational programs. Two-hundred and twenty students were invited to participate.

The sample (n = 181) comprised 77.9 % (n=141) girls and 22.1% (n=40) boys. The majority (69.8%) of the students were adolescents aged 15 – 16 years old, and the mean age was 17 (SD 2.6; range 15 – 31 years). Among the students, 70.2 % selected “motion enjoyment”, and 29.8 % selected “sport enjoyments”.

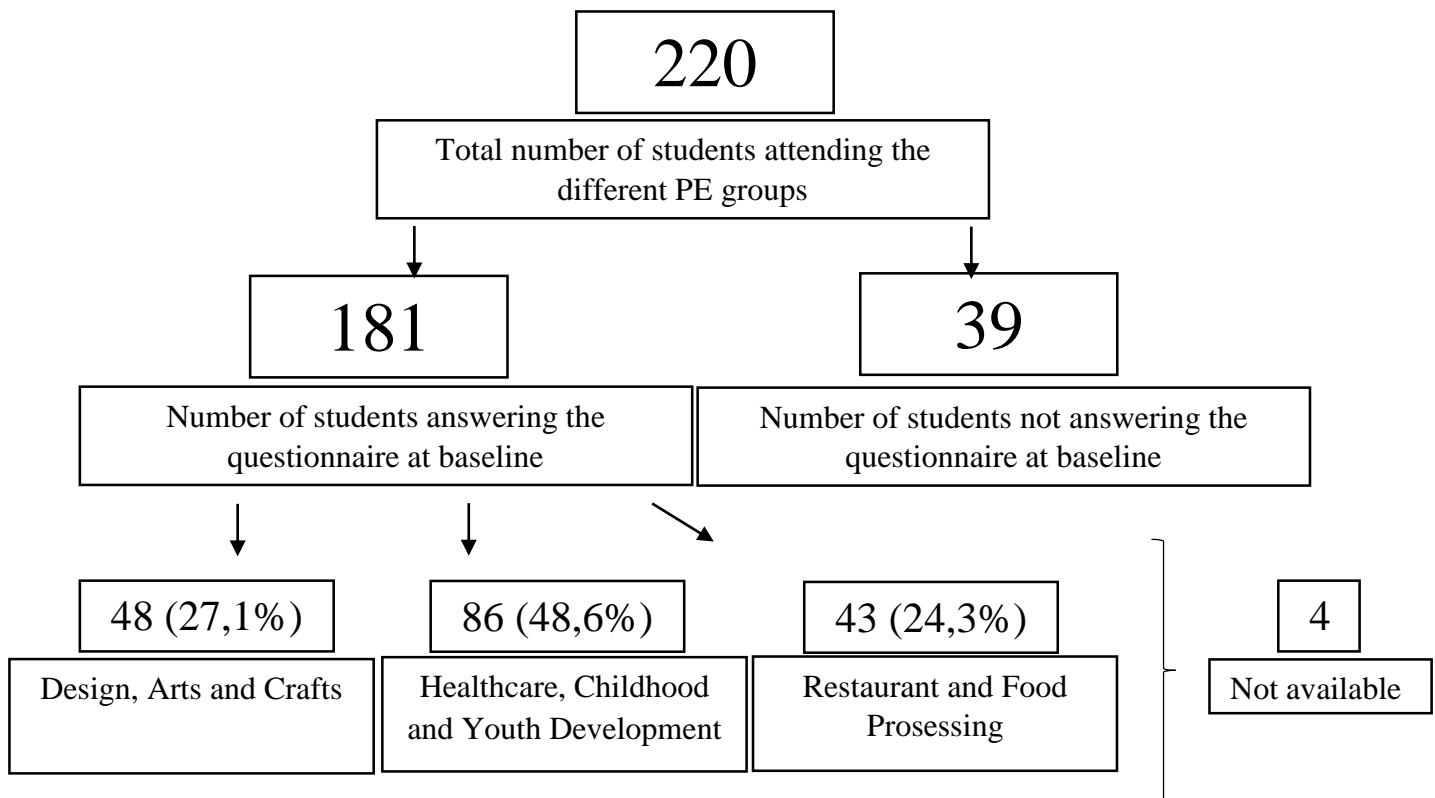


Figure 2: Distribution of students attending to vocational programs and participated in the study.

4.5 Instruments

Validated instruments and questions is included in this thesis: KIDSCREEN-10, ALGPS and self – reported physical activity. The students responded to the questions electronically via “SurveyXact”. The questionnaire was designed to be easily understandable for adolescents using a clear language and basic type of script. Most of the questions were multiple-choice. However, six of the questions required the students to answer with a number. Additionally, two open questions required a one-word answer. The questionnaire took approximately 20 – 30 minutes to complete.

4.5.1 KIDSCREEN - 10

This study used KIDSCREEN – 10 to describe adolescents` HRQOL. The questionnaire is a generic and “multidimensional construct covering physical, emotional, mental, social and behavioral components of well-being” (Ravens-Sieberer et al., 2014, p. 792). The KIDSCREEN – 10 version covers the following items; `felt fit and well?`, `felt full of energy?`, `felt sad?`, `felt lonely?`, `had enough time for yourself?`, `been able to do the things that you want to do in your free time?`, `parent(s) treated you fairly?`, `had fun with your friends?`, `got on well at school?` and `been able to pay attention?`. The adolescents were asked to consider the past week and give their response on a 5-point Likert scale ranging from “not at all” to “extremely” (Ravens-Sieberer et al., 2010). The questionnaire has satisfactory reliability and validity, both national and international, in regards to its applicability on screening children and adolescents aged 8 - 18 (Haraldstad, Christophersen, Eide, Nativg, & Helseth, 2011a; Ravens-Sieberer et al., 2010; Ravens-Sieberer et al., 2014). In this study, Cronbach’s alpha in HRQOL index was 0.73, and is considered satisfactory (Fayers & Machin, 2009).

4.5.2 ALGPS

ALGPS provides information on perceived importance and perceived attainability of the four most subscribed life goals for meaning making; relation, generativity, religion and achievements (Gabrielsen et al., 2012). The scale consists of 16 + 16 items (16 perceived importance of life goals and 16 perceived attainability of life goals respectively), and was scored on a 5-point Likert scale ranging from “not important” to “very important”, and from

“not attainable” to “very attainable” (Gabrielsen et al., 2012). Cronbach’s alpha in this study on the four ALGPS important domains was 0.73 for relation, 0.82 for generativity, 0.46 for religion and 0.79 for achievements. The reliability of each factor is considered satisfactory, albeit a bit low on religion factor (Fayers & Machin, 2009). In the multiple regression analysis, multicollinearity is a problem according to the natural high correlation between life goals factors importance and attainability.

4.5.3 Self – reported physical activity

All the self-reporting physical activity questions applied in this questionnaire has previously been used in the study “Aktiv ungdom med overskudd” [“Youth with Profits”](AUO). The students described `how many times a week` and the `number of hours they spent physically active` in leisure time `until they got out of breath or sweat`. Additionally, the students were asked to report on the `level of enjoyment` in PE, their previous `grade` in PE, as well as their `level of participation` in PE at junior high. The adolescents` screen time was measured to evaluate sedentary behavior. The “Stage of Change” is a self - reported instrument, valid with a clear exercise definition, to describe the students’ activity level and exercise habits. This model is considered a legitimate method used to describe and modify behavior (Wester et al., 2008). In order to increase the model`s validity and reliability, a standardized staging in the questionnaire was applied. This model is not valid to provide evidence of change over time, especially regarding adolescents (Spencer, Adams, Malone, Roy, & Yost, 2006). Using this model in planning of interventions have mixed results (Prestwich et al., 2014). However, as applied in this thesis, it can visualize the engagement required in order to live a physically active lifestyle (Nigg, 2001).

4.6 Statistical analysis

Statistical analysis was carried out using the Statistical Package for Social Science (IBM SPSS Statistics 21). Descriptive statistics gave an overview of demographic variables. Continuous variables were expressed as the mean (M) and with standard deviation (SD). Categorical variables were expressed by numbers and percentages (%). In exploring differences among the students in “motion enjoyment” and “sport enjoyment”, regarding HRQOL, life goals and self-reported physical activity, the group comparisons testing the significance of differences were presented (Polit & Beck, 2013). In the group comparison,

independent sample t – tests were used for continuous variables, and chi – squared tests were used for categorical variables. Non – normal variables were expressed as mean (M) and with standard deviation (SD), however, in the group comparison a mann-whitney U-test was used. Age was divided into three groups, one – way ANOVA analysis of variance in the age groups with HRQOL and ALGPS was calculated. Testing if variables was to be used in parametric statistical analysis, skewness analysis was performed to provide information about the symmetry of the distribution (Pallant, 2005). In order to identify if the variables were normal-distributed the skewness value was set to range between -1 and + 1.

According to published scoring procedures, a general index for analyzing HRQOL was performed. The summary of the components expresses a value from 0 to 100, where 100 representing excellent HRQOL (Ravens-Sieberer et al., 2010). Analysing and scoring the ALGPS leaves us with 8 independent variables (range 0 – 5), perceived importance for each of the four life goals and perceived attainability of these goals (Gabrielsen et al., 2012).

Furthermore, to examine if life goals and self-reported physical activity are associated with HRQOL, a multiple regression analysis was performed. The multiple regression analysis explore an understanding of the effect of multiple independent variables on a dependent variable (Polit & Beck, 2013). In both of the analysis, HRQOL was the dependent variable. Multiple correlations coefficient (varies from .00 – 1.00) indicates the strength of relationship between several independent variables, however it does not indicate direction (Polit & Beck, 2013). The first analysis examined if life goals were associated with HRQOL adjusted for age, gender and model in PE. It was further essential to examine HRQOL association with physical activity variables adjusted for demographic variables; age, gender, high school programs and model in PE. The included physical activity variables in the multiple regression analysis are based on theoretical consideration and previous literature. It was essential that variables included, focused on, and were relevant to the health promotional aspect. Physical activity variables included in the multiple regression analysis were: `like PE`, `physical activity in leisure`; number, `stage of change` and `screen time behavior`; hours. It was not possible to include all physical activity variables in the multiple regression analysis due to the number of participants. A p – value less than 0,05 was considered statistically significant (Polit & Beck, 2013).

4.6.1 Re – categorise variables

Age was divided into three categories: `15 – 16`, `17 – 18` and `19 years and older`. Socioeconomic status was divided into three groups: `education level less than 13 years`, `education level more than 13 years`, and the students that `did not know the parents educational level`. Participation in PE at junior high was presented as dichotomous variables, grouped as follows; `the students that rarely participated in PE` and `the students occasionally or regularly participated in PE`.

5.0 Methodological considerations

In order to ensure useful and high-quality results, biases have been accounted for (Brenner, Billy, & Grady, 2003). Survey research obtains self-reported information about the students' action, attitude and intention to engage in PE within the high school context (Polit & Beck, 2013). The selected instruments, HRQOL and ALGPS intend to measure positive aspects of adolescents' life. Focus on positive feelings can lead to direction and meaning in life, and this knowledge can be used to promote health and well-being (Seligman, 2011).

5.1 Study design

Baseline data in the intervention were used to answer the research question in this thesis, and the study has a cross-sectional design. Cross-sectional design makes it possible for descriptive statistic, group comparison, as well as exploring possible correlations with the main instrument. This design is easy manageable and economical, yet it does presents certain limitations (Polit & Beck, 2013). When measurements are carried out at a specific point of time, makes it impossible to establish representations of the longitudinal processes. Using only cross-sectional design, it is not possible to describe cause and effects (Polit & Beck, 2013; Shadish, Cook, & Campbell, 2002). All causal discussions presented in this thesis have their foundation in theoretical background and previous research.

Due to two main evaluations, the post-test were excluded. Firstly, the response rate from baseline to post-test was considerably lower, and a whole "sport enjoyment" class did not participate in post-test data collection. "Sport enjoyment" represents a smaller group under study (29,8 % N = 54) in baseline, and with a whole class missing in post-test, a skewed

distribution would have been presented. Second, this thesis explored status on subjective measures of life goals and HRQOL. A range of variables not included in this study could influence prospective change in these instruments. Thus, it becomes ambiguous to predict what influences the potential change in the main instrument. As the main instrument measures changes in psychological aspects, it was not feasible to conclude if changes in life goals or HRQOL can have any association with the objectives and participation in PE.

5.2 Participants

All the students attending the vocational programs were included in the study, and no exclusion criterion was constructed. Unfortunately, there was no information on the students that did not participate in the study. Nonetheless, it is likely to assume that missing participants could correlate to absence from school at the day of data collection. Furthermore, it is essential to mention that the context of PE can create dropouts in students that originally do not participate. Partaking in a survey requires a certain amount of motivation by the students in order to obtain reliable information and high response rate (Halvorsen, 2008). Presenting a reliable description of the target group is not possible if the students that do not regularly participate in PE, additionally are absent at the point of data collection (Polit & Beck, 2013).

5.3 Data collection

When developing the questionnaire with multiple answering alternatives it is essential that every subjective study is able to identify himself or herself with a reasonable answer that is not conflicting with the truth (Polit & Beck, 2013). Social desirability response is problematic when using self-report questionnaires as we all have a tendency to present ourselves the best way possible. This refers to the participants misrepresenting their opinions by either under- or over-reporting their answers due to prevailing social norms (Polit & Beck, 2013). This problem increases especially within the context of PE where the aim is to increase physical activity level and contribute to good exercise habits (Brener et al., 2003). Thus, there might be a problem regarding socially desirable response in this thesis, for instance an inflated physical activity level due to social expectations. When collecting data it is essential to guarantee the confidentiality of the respondents and create a non-judgemental atmosphere (Polit & Beck, 2013). Similarly to what Podsakoff, MacKenzie, Lee, Podsakoff, and Zedeck (2003) point out,

the researcher has to inform that there is no wrong answers, and that the respondents should answer as honestly as possible. Further, it is essential to highlight that the answers are anonymous. Furthermore, van de Mortel (2008) argue that the problem of social desirability could be especially evident when using of self-reported questionnaire containing socially sensitive items.

The data collection was performed in a high school context, and researchers from Agder University were present during the data collection. This could decrease error of instrument and biases. The assignment for researchers that participated was to provide clear information about the purpose of the study, identification number for sustained anonymity, and help the students when uncertainty in the questionnaire arose. The research group of Agder consisted of multiple researcher that attend the data collections, and it is essential that a plan for gathering the data was in place (Polit & Beck, 2013).

Pre-understanding of the concepts could affect the direction of this thesis, analysis and theoretical references presented. Different results can arise among the high schools and classes each year. Occasionally the influence of classmates or teachers have the strength to affect the majority in a class to either increase or decrease the participation and enjoyment of physical activity or PE. Furthermore, culture differences occur from Southern to Northern Norway. The leisure time was not affected since the intervention and questionnaire was in mandatory school time. It is further likely that high school – based surveys yield high response rate as PE is mandatory in the Norwegian school system.

5.4 Instrument

An overwhelming number of potential variables can influence the relationship among self-reported physical activity, life goals and HRQOL, alongside other influences not examined in this thesis. Other measurements are available in understanding these concept, which may lead to other results.

Questionnaires over the internet are one of the most economical way to collect data (Polit & Beck, 2013), and the students answered electronically using “SurveyXact”. Regarding the individual experience that HRQOL and ALGPS presents it is not possible to measure these concepts objectively. These phenomena are directly related to individual feelings and

experience of well-being (Fayers & Machin, 2009; Næss, Moum, & Eriksen, 2011). The level of physical activity can also be targeted by objective measurements. The objective measurements often provide a physical activity level closer to reality than subjective measures. When reporting on individual physical activity level in self-reported questionnaire, it can be difficult to remember back in time, especially when focusing on intensity and duration. The objective instrument can measure intensity and duration, and provide reliable information in regard to physical activity level (Hagströmer & Hassmén, 2009). The questionnaire used in this thesis includes valid instruments in reporting the students' physical activity level. The context was described (leisure time activity on the weekends or after regular school hours), and examples of activities presented (run, walk fast, bicycle, swimming, roller skate, skiing, scooter, swimming, football or dancing). The intensity regarding exercise is defined (moderate to vigorous PA as: 'til you get out of breath or sweat') and the duration is described (3 or more times each week, in at least 20 minutes). This increase validity in regards to the use self-report physical activity instruments (Brenner et al., 2003).

The definition used in KIDSCREEN-10 and ALGPS presents as the same dimensions the theoretical framework in this thesis wants to explore. This increases the thesis' validity. KIDSCREEN - 10 instruments were developed and studied in 13 European countries (KIDSCREEN Group, 2004), and is in later years translated into Norwegian (Haraldstad, Christophersen, et al., 2011b). The instrument is available in three versions: 52-items, 27-items and 10-items (Ravens-Sieberer et al., 2014). The 10-version used in this thesis provide one general index that presents a valid measure for HRQOL. However, the instrument does not represent all dimensions in KIDSCREEN-52 well (Ravens-Sieberer et al., 2010). ALGPS is a new scale developed by Gabrielsen et al. (2012) to provide an approach to measure the "Big 4" of meaning-making described in Emmons (2003). Assessing the validity of the scale, it was examined how the scores related to scores on established measures of satisfaction with life, sense of coherence, happiness, and general perceived self-efficacy (Gabrielsen et al., 2012). The scale is previously tested on high school students from general studies versus vocational programs (Gabrielsen et al., 2012), and among clinical versus non – clinical adolescents (Gabrielsen, Watten, & Ulleberg, 2013). Previous Cronbach's alpha was considered satisfactory (Fayers & Machin, 2009), but a bit low on the achievements factor (0.65).

5.4.1 Reliability

Reliability refers to accuracy of the information and whether the method is consistent with a persons` perception or not (Fayers & Machin, 2009; Polit & Beck, 2013). Reliable results relates to accuracy in data collection. High reliability is achieved if the instrument can reproduce and analyze the same results under equal circumstances. Lower degrees of variations equals higher reliability (Polit & Beck, 2013). Research has shown that children understand and reflect on what happens in their life down to the age of eight. Thus, the reliability of reports on their health and well- being are high (Riley, 2004). There are three aspects of interest regarding high reliability in quantitative research: stability, equivalence and internal consistency.

Stability relates to how similar results are obtain on separate measures, and that test re-test produces similar, yet not identical results (Polit & Beck, 2013). A reliability coefficient above 0.70 is considered “adequate”, but coefficients above 0.80 are “ far preferable” (Polit & Beck, 2013, p. 203). Test re-test reliability was performed by administrating the total questionnaire at two different occasions using a test group. The measured reliability presented calculated the correlation between the two obtained scores (Pallant, 2005). The test re-test in this thesis provide a reliability coefficient of 0.78. Equivalence concerns to what degree two or more independent instruments are in accordance with scoring (Polit & Beck, 2013). Unpaired t-test result performed by GraphPad indicates that our results of HRQOL and ALGPS are in accordance with the study of Haraldstad, Christophersen, et al. (2011b) and Gabrielsen et al. (2012). When the instrument contains several subparts, it is possible to estimate the internal consistency (Polit & Beck, 2013). The grade of internal consistency can statically can be calculated by Cronbach`s alpha and valued between 0.00 and +1.00. A reliability coefficient of 0.70 and above is often respectable (Fayers & Machin, 2009). In this study, Cronbach alpha in HRQOL index was 0.73, and ALGPS important domains, Cronbach`s alpha was 0.73 for relation, 0.82 for `generativity`, 0.46 for `religion` and 0.79 for `achievements`. All factors are considered satisfactory with the exception of `religion`. It is essential to notice that if tests do not reproduce consistency the results cannot be trusted. An unreliable study is not valid (Thomas, Nelson, & Silverman, 2005).

5.4.2 Validity

Validity is important to evaluate the method used in research, and if instruments measure what they are intended to measure (Fayers & Machin, 2009; Polit & Beck, 2013; Thomas et al., 2005).

External validity discusses generalization from participants to population or settings (Shadish et al., 2002). MacCallum, Widaman, Zhang, and Hong (1999, p. 84) and Tabachnick and Fidell (2007, p. 613) consider a participants size of greater than 200 as “fair”. A participants size greater than 300 is considered “good”. This study tended to include 220 students in the vocational programs, however, the final number of students participated in the baseline was 181. The average response rate was 82%, and this is considered satisfactory (Baruch, 1999). With regard to generalization, the result may be transferred to other high school settings, due to the homogenous character of Norwegian high schools. However, some limitations regarding the participant size and distribution among gender and students preferring “motion enjoyment” or “sport enjoyment” are observed. There is inequality referring to the genders favouring girls (77.9% n=141) versus boys (22.1% n=40). Inequality is also observed between the models in PE, where 70.2 % (n=127) among the student body enrolled in “motion enjoyment”, whereas 29.8 % (n=54) were enrolled in “sport enjoyment”. The distribution among the students could create a challenge in regards to generalizing the findings. Furthermore, the cross-sectional design has limitations with regards to the interpretation of data.

The data included several previous well-validated questionnaires, and the selected instruments are in accordance with the objectives of the present study. This increase the validity of the findings. HRQOL is measured with KIDSCREEN – 10, and a definition that clearly describes the concept is provided. The theoretical conceptualizations of HRQOL is essential in order to increase construct validity, especially since it is explored as the dependent variable (Polit & Beck, 2013). Life goals are measured with ALGPS, which provides instruments of complex constructs. Measuring the students’ life goals and valuable information regarding the inner values and thoughts may cause difficulties in providing academic precision. Still, even though the concept is complex and difficult to investigate, it should still be studied (Gabrielsen, 2012).

Internal validity refers to manifesting the causal relationship (Shadish et al., 2002). One way to protect internal validity is to randomise groups by facilitating similarities among the participants, and measure concepts that could be different. In this study, the groups are not randomised and internal validity was not protected this way. However, in the multiple regression analysis, the dependent HRQOL variable controlled for well-known associations such as age, gender and direction in PE. By involving these well-known associates and the constant influences in regards to HRQOL, it is possible for the true relationship to be establish. Furthermore, when using cross-sectional design and correlational studies it is unclear whether the independent variables precedes the dependent variables, or whether it is inversely. There are competing explanations and uncertainties with the presented results as the causal relationship is not presented (Polit & Beck, 2013). All causal discussions presented in this thesis have the foundation in theoretical background and previous research. Further, other factors not controlled for might contribute to the variance in HRQOL. In order to explain stability over time, future research on HRQOL and ALGPS should be explored using a longitudinal approach.

5.5 Statistical discussion

The parents' education level is not included in the multiple regression analysis. Firstly, due to the lack of variance between the groups, and secondly, due to the considerable amount (40%) of students answer 'don't know' at the multiple choice alternatives. 'Stage of change' is the only variable with a five – point Likert scale. In previous research, this model has been presented in a number of different traditions. In this thesis, the model 'stage of change' will be presented as a continuous variable due to the equal division between the alternatives offered in the questionnaire.

Due to the fact the results are obtained using a cross-sectional design, it is not feasible to predict any correlations between the variables, instead due to the chosen statistical tool, only associations among the variables are possible to present. HRQOL is in both the analysis a dependent variable. The multiple regression analysis is performed as a backward elimination method. In controlling whether the backward method is reliable, enter and stepwise method are also performed. There are consistent findings in all analysis, which indicate reliable results. The inter-correlation in the multiple regression analysis is calculated with variance inflation factor (VIF) and whether the independent variables are highly correlated (Mansfield

& Helms, 1982; Pallant, 2005). There is a high correlation among `importance` and `attainability` life goal factors, and thus a separate multivariate analysis (not presented) is performed, excluding all the `importance` life goal factors. In this multiple regression analysis, the same result occurs on the attainable factors. In the multiple regression analysis performed with physical activity habits, adjusted for demographic variables, multicollinearity did not occur.

5.6 Ethical aspect

Ethical consideration refers to moral values that concerning how the professional researcher appear, and respect the participants' vulnerability. The codes of ethics has been developed in the Declaration of Helsinki, latest revised in 2008 (Polit & Beck, 2013). Children and adolescents are especially vulnerable group (Polit & Beck, 2013), and research must strive to protect their rights (Bell, 2008). When conducting research on this age group a special knowledge is required in order to use a suitable and appropriate method as it is more difficult for this group to protect their own interests (Befring, 2007).

There are three ethical principles described in Belmont Report (written in 1978), that intends to guide research, and protect the students' rights; respect for person, beneficence and justice (Sims, 2010). Participation in this study was voluntarily, and it was allowed to withdraw from the study, ask question, and refuse to give information. Beneficence discuss the duty to maximize benefits and minimize harm. Justice relates to participants' right to maintain privacy, anonymity and right to fair treatment (Polit & Beck, 2013). Identification numbers secures the students' anonymity. The study does not include medical information. All participants received verbal and written information on the two directions in PE. The students were informed of the research in advanced. The study was approved by the Norwegian Social Science Data Service (NSD), and by the Regional Ethics Committee (FEK).

6.0 Conclusion

The primary motivation for conducting this research was to contribute with knowledge and a better understanding of the students preferring different direction within PE. Exploring life goals among adolescents can contribute to gain insight and provide a deeper understanding of

what is considered as meaningful in these years. Well-being and HRQOL in adolescents are well-known goals for public health workers. This study showed that:

- The students preferring “sports enjoyment” are more physically active in average, and use less hours on screen time behavior. Furthermore, this group appears to like PE, participate more regularly and receive a higher grade in PE than the counterparts “motion enjoyment”.
- HRQOL is observed higher among the students favoring “sport enjoyment”.
- When dividing all the students into three age groups, the youngest group reported highest HRQOL, and the boys among the youngest group reported higher HRQOL than the girls.
- There are no differences in life goals between “motion enjoyment” and “sport enjoyment”.
- Self-reported physical activity and life goals are limited associated with HRQOL.
- The experience of life goals explore another aspect to individual than HRQOL.

7.0 Future implications

Exploring HRQOL and life goals is an important contribution for public health in order to increase subjective well-being among adolescents. In order to better understand stability over time, future research on HRQOL and ALGPS should be explored in longitudinal studies. Relating other factors and interactions with the concepts of HRQOL, life goals and physical activity, other research designs are of interest. Future research organizing students in PE might contribute to increase knowledge and understanding of the students favoring either the aspect of “motion enjoyment” or “sport enjoyment”. Increase knowledge regarding the students experience in PE, qualitative research is of value. To gain further knowledge regarding the students` experience in PE a qualitative approach is recommended.

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Part II

PAPER

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Exploring the relationship between Physical Activity, Life Goals and Health Related Quality of Life among High School Students: a School Based Survey.

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Abstract

Background. Intending to increase participation in physical education (PE), two models are developed: “motion enjoyment” and “sport enjoyment”. The former focuses on health effects by being physically active and promoting good experiences in PE, while the latter emphasises athletic sport, activity skills, techniques and improvements of physical performance. The aim of the present study is to explore differences between the students selecting “motion enjoyment” and “sport enjoyment”. Additionally, it sets out to examine if life goals and self-reported physical activity are associated with Health Related Quality of Life (HRQOL).

Method. One-hundred and eighty-one high school students (median age 17), 141 girls and 40 boys were included in this cross-sectional study. HRQOL was measured using KIDSCREEN - 10, and life goals by Adolescents Life Goal Profile Scale (ALGPS). Independent sample t-tests, chi-square and one-way ANOVA were applied to compare students in the two directions in PE. Multiple regression analysis was used to explore if life goals and self-reported physical activity are associated with HRQOL.

Results. Self-reported physical activity level and HRQOL is higher among the students in “sport enjoyment”, while perceived importance of life goals remained the same regardless of model preferred within PE. Multiple regression analysis revealed that only `attainable achievements-oriented` life goals ($B = 4.29$; 95% CI = .80 – 7.77; $p = .017$) with the independent variables `age` ($B = (-)1.09$; 95% CI = (-)2.03 – (-).15; $p = .023$) and `model in PE` ($B = (-)7.45$; 95% CI = (-)12.75– (-)2.15; $p = .006$) were associated with HRQOL.

Exploring the relationship with self-reported physical activity; only `like PE` ($B = 1.86$; 95% CI = .55 – 3.17; $p = .006$) with the independent variables `age` ($B = (-)1.33$; 95% CI = (-)2.21 – (-).44; $p = .004$) and `vocational programs` ($B = (-)3.20$; 95% CI = (-)6.17 – (-).23; $p = .035$) were associated with HRQOL.

Conclusion. Self-reported physical activity habits and life goals are limited associated with HRQOL. The experience of life goals explore another aspect to individual than HRQOL. Exploring HRQOL and life goals is an important contribution for public health in order to increase subjective well-being among adolescents.

Keywords. Adolescents - High school - Health Related Quality of Life - Life Goals - Physical Education - Physical Activity

Background

Regular physical activity is beneficial to physical, mental and social aspects of health among adolescents [1-3]. It is crucial to develop sustainable and beneficial habits at an early age to contribute towards a healthy and physical active lifestyle in adulthood [4, 5]. Physical activity is here defined as “any bodily movement produced by skeletal muscles that results in energy expenditure” [6]. Decreased physical activity level and inactivity are well-known phenomenon in adolescence [7, 8]. This international trend is also evident among Norwegian adolescents [9, 10]. While physically active behaviour decreases the sedentary behaviour increases [8], and sedentary behaviour is negatively association with mental health and well-being [2]. Through physical education (PE), the high schools have a responsibility to inspire adolescents for a lifelong enjoyment, and inspire them to be physically active in all aspects of life [11]. Adolescence is influenced by a continuous identity development alongside with attaining increased autonomy. Autonomy is improved by becoming more emotionally independent in relationships to others, developing personal beliefs, and making independent decisions [12].

The empirical approach to study human strength and virtues often includes by studying life goals. This knowledge can be used to promote health and well-being, and one key issue in positive psychology is our need for directions and meaning in life [13]. Locke [14] points out that “goals are the means by which values and dreams are translated into reality”. Further, Emmons [15] indicates that “goals are essential components of a person’s experience of his or her life as meaningful”. Similarly, in the salutogenetic theories of health, put forward by Antonovsky and Lev [16], meaningfulness is the most vital component to uphold and strengthen ones sense of coherence and thereby the all important coping mechanisms needed when challenged with ill-health. Thus, becoming aware of ones intrinsic life goals appears vital in the pursuit of meaning, and adolescents who have clearly defined goals and believe these to be attainable exhibit increased mental health, well-being, and self-efficacy [17].

Engaging in regular physical activity is associated with higher Health Related Quality of Life (HRQOL) in adolescents [18]. HRQOL is here defined as “a multidimensional construct covering physical, emotional, mental, social, and behavioural components of well-being and functioning as perceived by patients and/or other individuals” [19]. HRQOL declines with age

and HRQOL decreases more in girls than in boys [20-22]. Furthermore, bullying, negative body image and sensation of pain are all negatively associated with HRQOL [20]. Hence, in a health promotional view, an inactive lifestyle may influence and increase future health risks [1, 23-25]. Contrary, a physically active lifestyle contributes to cardiorespiratory fitness, muscular strength and enhanced bone health [26-30]. Considering this, being physically active has the strength to improve health in multiple dimensions in life, and participation in PE has the potential effect towards increasing adolescents' subsequent physical activity habits. Some adolescents appreciate competition as a motivating factor, while others emphasises the social aspects [3].

Intending to involve students that do not appreciate sport and competitions, two models were developed, constructed on diverse aspects of being physically active; "motion enjoyment" and "sports enjoyment". "Motion enjoyment" emphasises on promoting good experiences in PE, and making students conscious about positive health effects by being physically active. The other model, "sport enjoyment", represents athletic sports, activity skills, techniques and improvements of physical performance. Competitions and tests are emphasised in this model.

Unfortunately, a limited body of research describes and identifies adolescents that do not participate in PE. Hence, the primary motivation for conducting this research is to contribute with an improved understanding of the students favouring either "motion enjoyment" or "sport enjoyment". The objectives of the present study are to explore differences between the students selecting "motion enjoyment" and "sport enjoyment". Additionally, it sets out to examine if life goals and self-reported physical activity are associated with HRQOL.

Method

Study design, the setting and participants

In order to examine characteristics of students selecting the different directions in PE, cross-sectional baseline data were used. Data were obtained from high schools where PE teachers had experienced low commitment by students in participating PE. Decreased participation in PE creates a challenge for the PE teachers in that they wish to contribute towards healthy habits for the students. In an attempt to increase participation, the high schools adopted the two directions in PE. The concern particularly involves students attending to vocational

programs, programs that require good physical health in future work life. A total of 220 first year students attended the high school programs that participated in the new directions of PE. During the first week at high school, the students received information about the directions in PE through meetings and written information. After six weeks, the students were required to decide which model they wanted to partake in.

The sample (n = 181) comprised of 77.9 % (n=141) girls and 22.1% (n=40) boys. The majority (69.8%) of the students were adolescents aged 15 – 16 years old, and the mean age were 17 (SD 2.6; range 15 – 31 years). The students included in this study represents high school programs; Restaurant and Food Processing (24.3%), Design, Arts and Craft (27.1%) and Healthcare, Childhood and Youth Development (48.6%). Among the students, 70.2 % selected “motion enjoyment”, and 29.8 % selected “sport enjoyments”.

Instruments and variables

The students responded to the questions electronically via “SurveyXact”. The questionnaire was designed to be easily understandable for adolescents, using a clear language and basic type of script. Furthermore, the questionnaire comprised several well-validated questionnaires and questions. Most of the questions were multiple-choice. However, there were six questions where students were required to answer with a number, and two open questions formed as a one – word answer. The questionnaire took approximately 20 – 30 minutes to complete. The Norwegian Social Science Data Service (NSD) approved ethical considerations regarding the anonymity of the students.

Demographic variables. The first part of the questionnaire included demographic details such as gender, age, model in PE, vocational programs and parents’ socioeconomic status. In analysis, age were divided into three groups: 15 – 16 years, 17 – 18 years and 19 years and older. Socioeconomic status of the parents were assessed by education level, which was divided in three groups: `education level less than 13 years`, `education level more than 13 years`, and `the students that did not know the parents educational level`.

Self-reported physical activity habits. The students were asked to describe how many times a week and the number of hours they spent physically active in leisure time `until they get out of breath of sweat`. Additionally, the students were asked to report the level of enjoyment in

PE, as well as previous grade in PE and level of participation in PE at junior high. Participation in PE at junior high was presented as dichotomous variables divided in the students that `rarely participated` and students that `occasionally or regularly` participated in PE. Adolescents` screen time was measured to evaluate sedentary behaviour. In order to describe the students` exercise habits, the model “Stage of Change” was applied. This model is a self-reported measurement, valid with a clear exercise definition [31], and containing five stages (pre – contemplation, contemplation, determination, action and maintenance) each stage described with a sentence. The “Stage of Change” is the most legitimate method to describe and modify exercise behaviour [32].

General health perception. The students had to evaluate their general health presented as “on a regular day, how would you describe your health?” divided in a five-point Likert scale ranging from “excellent” to “poor”.

The Adolescent Life Goal Profile Scale (ALGPS). ALGPS provides information of perceived importance and perceived attainability of the four most subscribed to life goals for meaning making. The life goals are considered the “Big 4” of meaning [15] and are, when adapted to adolescents, Relations, Generativity, Religion and Achievements. The scale can be applied to research both focusing on general adolescent research and as approach to individual therapy [17]. The scale consists of 16 + 16 items (16 perceived importance of life goals and 16 perceived attainability of life goals respectively) and is scored on a 5-point Likert scale ranging from “not important” to “very important”, and from “not attainable” to “very attainable”. Scoring the ALGPS leaves us with 8 independent variables (range 0 – 5); perceived importance for each of the four life goals and perceived attainability of these goals [17]. Cronbach’s alpha in this study in the four importance ALGPS domains were 0.73 for relation, 0.82 for generativity, 0.46 for religion, and 0.79 for achievements.

Health Related Quality of Life (HRQOL). The Norwegian version of KIDSCREEN – 10 measures HRQOL [33]. The questionnaire is a generic multidimensional construct covering “physical, emotional, mental, social and behavioural components of well-being” [19]. The instrument include 10 questions and adolescents had to consider their last week and respond from “not at all” to “extremely” on a 5-point response scale. According to scoring procedures, KIDSCREEN – 10 version gave one general HRQOL index of the ten components expressed as a value from 0 to 100, with 100 representing excellent HRQOL [34]. The questionnaire has

international reliability and validity in screening children and adolescents [19, 33, 34]. In this study, Cronbach's alpha in HRQOL index was 0.73, and it is considered satisfactory [35].

Statistical analysis

Statistical analysis was carried out using the Statistical Package for Social Science (IBM SPSS Statistics 21). Descriptive statistics are presented as numbers, percentage (%), means (M) and standard deviation (SD). In the group comparisons; independent sample t – tests were used for continuous variables, crosstabs for categorical variables, and Mann – Whitney U test for non-normal distributed continuous variables. Subsequently, one – way ANOVA analysis of variance in the age groups.

Multiple regression analysis was applied to further analyse the association between life goals and HRQOL adjusted for age, gender and model in PE. Additionally, the multiple regression analysis identified which self-reported physical activity variables that were independently associated with HRQOL adjusted for age, gender, vocational programs, and model in PE. Variables included in multiple regression analysis are based on previous studies and objectives presented. A p – value less than 0.05 was considered statistically significant [36].

Results

Demographic characteristics of similarities and differences among the students within the two models in PE are presented in Table 1. While the boys (57.5%) tended to select “sport enjoyment”, the girls (77.9%) tended to select “motion enjoyment” ($p = <.001$). There was no significant difference related to age ($p = .369$). The majority of the students, both in Healthcare, Childhood and Youth Development (80.2%; $n = 69$) and Design, Art and Craft (70.0%; $n = 36$) selected “motion enjoyment” ($p = .001$). In Restaurant and Food Processing, however, the students were more or less split equally between the two models in PE, with 51.2% ($n = 22$) of the students selecting “sport enjoyment”

Adolescents` physical activity habits

Differences in the students` physical activity habits were observed in the group comparison between “motion enjoyment” and “sport enjoyment”. “Stage of change”, which expresses the students` physical activity level and exercise habits, presented a significant ($p = <.001$) difference between the students selecting “motion enjoyment” and the students selecting “sport enjoyment”. The students participating in “motion enjoyment” reported that they currently engage in physical activity, however on an irregular basis. The students in “sport enjoyment” engage in physical activity regularly, yet the duration of being physically active varied between `less than six month` and `longer than six month` (Table 1).

The students participating in “sport enjoyment” reported that they were physically active three times a week in leisure time, approximately 5 – 6 hours in average; versus the students in “motion enjoyment” reported that they were physically active twice a week ($p = .003$), approximately 3 – 4 hours in average ($p = <.001$). In screen time, the students in “motion enjoyment” reported three hours on a regular day versus two hours reported in “sport enjoyment” ($p = .003$). Furthermore, the participants in “sport enjoyment” were graded higher in PE at junior high ($p = .008$) and they reported to like PE more ($p = <.001$). The students in “sport enjoyment” ($M = 4.2$; $SD = .9$) also reported higher general health perception than the students selecting “motion enjoyment” ($M = 3.7$; $SD = 0.9$; $p = .003$).

Insert Table 1 about here

Health Related Quality of Life (HRQOL)

There was a significant difference in HRQOL (Table 2) between students selecting “sport enjoyment” ($M = 66.6$; $SD = 16.7$) compared to student selecting “motion enjoyment” ($M = 58.9$; $SD = 16.7$; $p = .008$).

Insert Table 2 about here

There was a statistically significant difference between the age groups. The youngest students reported higher level of HRQOL (M = 64.7; SD = 16.3; $p < .001$) than the older ones. The students aged from 17 - 18 years reported the lowest HRQOL (M = 50.2; SD = 15.9) (Figure 1). Of the total sample, there was no significant difference ($p = .054$) between the genders comparison with HRQOL. However, testing for gender variance among the age groups, a significant difference occurred in the youngest group. The boys reported higher HRQOL (M = 77.1; SD = 12.0) than girls (M = 62.5; SD = 16.0; $p < .001$) (Figure 2).

Insert Figure 1 about here

Insert Figure 2 about here

Adolescents Life Goal Profile Scale (ALGPS)

In the group comparison shown in table 2, there is no significant difference in perceived importance and perceived attainability of life goals between the two directions in PE. Perceived good Relation (M = 3.7; SD = .9) was rated as the most important life goal, and Religion (M = 3.1; SD = 1.2) was rated as the least important life goal. When the students were divided into three age groups, the students aged from 15 – 16 years old reported higher importance on relation ($p = .002$) than the two other groups. The same group also viewed relations as more attainable ($p = .001$). Comparing the genders, the girls reported importance (M = 3.1; SD = 1.2; $p = .011$) and attainability (M = 3.1; SD = 1.1; $p = .035$) of religion higher than importance (M = 2.5; SD = 1.3) and attainability (M = 2.6; SD = 1.3) of religion among boys. Furthermore, girls reported higher on perceived importance of generativity (M = 3.7; SD = .8) than boys (M = 3.2; SD = 1.2; $p = .048$). There were no gender differences in perceived importance and perceived attainability on Relation - and Achievement - orientated life goals factors.

Associates of HRQOL

A multiple regression analysis explored the association between life goals and HRQOL, adjusted for age, gender and model in PE. Perceived attainable achievements - orientated life goal ($B = 4.29$; 95% CI = .80 – 7.77; $p = .017$), age ($B = (-)1.09$; 95% CI = (-)2.03 – (-).15; $p = .023$) and model in PE ($B = (-)7.45$; 95% CI = (-)12.75– (-)2.15; $p = .006$) were significantly associated with HRQOL (Table 3).

Subsequently, when examining which self-reported physical activity variables who were independently associated with HRQOL, adjusted for age, gender, vocational programs and model in PE (Table 4) revealed that like: PE ($B = 1.86$; 95% CI = .55 – 3.17; $p = .006$), age ($B = (-)1.33$; 95% CI = (-)2.21 – (-).44; $p = .004$) and vocational programs, with Restaurant and Food Processing as reference group ($B = (-)3.20$; 95% CI = (-)6.17 – (-).23; $p = .035$) were significantly associated with HRQOL.

Insert Table 3 about here

Insert Table 4 about here

Discussion

Adolescents selecting “sport enjoyment” reported to be more physically active compared to those selecting “motion enjoyment”, and they also reported higher HRQOL. When dividing the students into age groups, the youngest reported higher HRQOL, with boys reporting higher HRQOL than girls. There were no significant differences in life goal factors between the students in “motion enjoyment” and “sport enjoyment”.

The students preferring “motion enjoyment” were less physically active and spent significantly more hours on screen time entertainment. “Stage of change”, which expresses

the students' physical activity level and exercise habits, displayed that the students in "motion enjoyment" currently engage in physical activity, however on an irregular basis. The students in "sport enjoyment" engage in physical activity regularly. Additionally, the achieved grade in PE is lower among the students in "motion enjoyment". They also reported to like PE less than their counterparts in "sport enjoyment". Even though physical activity is generally understood as being beneficial to health, a substantial number of people face certain challenges in being physically active, most notably due to lack of motivation and lack of required skills and knowledge [3]. The selected approach in PE should improve the psychosocial benefits of physical activity since the internal motivation to engage in a physically active lifestyle is always central [37]. Activities that are internally rewarding are more likely to be repeated [38]. Not all choices positively predict enhanced motivation, however when a choice was offered in a way that met the students' needs regarding autonomy, competence and relatedness, it increased learning, motivation and well-being [39]. Previous research has identified that the self-determined theory by Deci and Ryan [40] might contribute to increase the level of motivation in PE. Additionally, an emphasis on this theory is likely to increase the intention of being physically active in leisure time, both pre- and post-graduation [41-43].

Regarding physical activity variables in multiple regression analysis, only the students that reported to like PE were associated with increased HRQOL. According to Granero-Gallegos, et al., [44] and Camacho-Miñano, LaVoi and Barr-Anderson [45] it is important that the selected activity in PE should generate fun, enjoyment, satisfaction and interests. High school-based interventions has previously demonstrated a positive impact on subsequent durations of physical activity levels [46-48]. Furthermore, boys more than girls seem to benefit from such interventions, and targeted interventions for girls should therefore be offered [45, 49]. Physical activity decreases with age, and boys are more physically active than girls [50]. The girls in this study tended to prefer "motion enjoyment", and including the basic concept this direction offers could help including and inspire both genders. Understanding why some adolescents are physically active while others are inactive might be important to increase awareness and target factors, which are known to cause inactivity [51].

Adolescence is a developmental period with psychosocial and somatic changes. The processes at managing changing bodies and changing identities may lead to problems when coping with situations that impair HRQOL in teenage years [52]. Among the youngest group (15 – 16

years), boys reported higher HRQOL than girls, nevertheless, gender differences are not observed among the older groups. Several earlier studies have found gender differences in HRQOL for adolescents [21, 22]. Surprisingly, gender differences are not associated with HRQOL. Similarly these findings are supported by Haraldstad, et al., [20] study which did not find gender to be a predictor of HRQOL in their adjusted analysis. Age is significantly associated with HRQOL in multiple regression analysis, with older adolescents scoring lower on HRQOL. These findings are in line with earlier studies in the field [20-22].

Although adolescents do not appreciate the engagement “sport enjoyment” offers, their life goals are equally valued among the students in “motion enjoyment” and “sport enjoyment”. Gabrielsen, Watten and Ulleberg [53] found that clinical adolescents upheld their belief and stay committed to life goals, though they may appear less content with life. There were no differences observed among clinical and non – clinical adolescent sample on perceived importance in the generativity-, religion- and achievements- oriented life goals factors [53]. Furthermore, individuals that frequently exercise spend significantly more amount of time and value exercise-goals higher than less frequent exercisers. It is important to note that even if these goals are valued differently, time spent on other goals that do not include exercise are valued the same [54]. Multiple regression analysis display that only attainable achievements – oriented life goals adjusted for demographic variables were associated with HRQOL. HRQOL and ALGPS explore some similar domains, however, the pursuit of life goals relates to other aspects of the individual function than HRQOL.

Strengths, limitations and future perspectives

Life goal profiles are measured using the ALGPS. Measuring the students’ life goals and valuable information regarding the inner values and thoughts. Regarding the strong ties between the choice of goals and psychological functioning, the results provided help nuancing the HRQOL findings. The study has a limitation to consider regarding the use of KIDSCREEN – 10 that represent only a sumscore when measuring HRQOL. A slightly different result might be found if the 27- or 52- item version was used. However, the 10-item is validated in screening children and adolescents (aged 8 – 18) [19, 33, 34], additionally, a conceptual definition for HRQOL is clearly described. Research has shown that children understand and reflect on what happens in their life down to the age of eight. The reliability of reports on their health and well- being are high [55].

The cross-sectional study has limitations with regard to the interpretation of data. Specifically, it is not possible to infer causal change over time. However, it would not be possible to predict change in the intrapsychic states that HRQOL and ALGPS explore regarding the engagement in either “motion enjoyment” or “sport enjoyment”. Therefore, a longitudinal study is not necessary in order to answer the study objectives. All causal discussions presented in this thesis have the foundation in theoretical background and previous research. Further, other factors not controlled for might contribute to the variance in HRQOL. In order to better understand stability over time, future research on HRQOL and ALGPS should be explored in longitudinal studies.

The average response rate was 82 %, and this is considered satisfactory [56]. There was no available information on the students that did not participate in the study. Nonetheless, it is likely to assume that missing participants could correlate to absence in the day of data collection. However, one limitation regarding the participants refers to the overwhelming majority of the students were girls (77.9%). Additionally, inequality is observed referring to the models in PE, where 70.2 % among the students selected “motion enjoyment”. With regard to generalisation, the result may be transferred to other high school settings, since the high school system in Norway is rather homogenous.

Conclusions

Those favouring “sport enjoyment” reported to engage in more physical activity than their counterparts, and experienced higher HRQOL than the students in “motion enjoyment”. Nonetheless, life goal is equally valued between the different directions within PE. Life goals and self-reported physical activity showed few and limited associations with HRQOL in the adjusted model. It is essential to notice that even if HRQOL and pursuit of life goals increase subjective well-being, these are not rated similarly among the students. Thus, becoming aware that HRQOL and ALGPS explore some similar domains in life, the pursuit of life goals relate to other aspects of the individual functioning than the subjective experience of HRQOL. Positive well-being is a recognized goal for public health, and the internal motivation towards human desire to live a meaningful life is always essential.

List of abbreviations

Health Related Quality of Life: HRQOL - Adolescent Life Goals Profile Scale: ALGPS -
Physical Education: PE

Competing interests

The author declare that there is no competing interests.

Authors' contributions

The research group in Agder contributed by making substantial contribution towards the conception, design and acquisition of data. JS contributed to the statistical analysis, interpretation of data and the drafting of the paper.

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Tables & Figures

Table 1. Mean/median scores for students selecting “motion enjoyment” and “sport enjoyment” and comparison between the groups regarding demographics, general health perceptions and PA habits

Table 2. Mean scores and standard deviation in Health Related Quality of Life (HRQOL) and Adolescents Life Goals Profile Scale (ALGPS), in “motion enjoyment” and “sport enjoyment”

Figure 1. One way – ANOVA for age groups comparisons with HRQOL

Figure 2. T – test for gender comparisons in age groups with HRQOL

Table 3. Association between life goals, demographics and HRQOL in the high school students.

Table 4. Association between self-reported PA, demographics and HRQOL in the high school students

Table 1. Mean/median scores for students selecting “motion enjoyment” and “sport enjoyment” and comparison between the groups regarding demographics, general health perceptions and PA habits

	Total	“Motion enjoyment”	“Sport enjoyment”	<i>p</i> – value
¹ Age (years)	17.0 (2.6)	17.1 (2.6)	16.9 (2.7)	.369
Boy	40 (22.1%)	17 (42.5%)	23 (57.5%)	<.001
Girl	140 (77.9%)	109 (77.9%)	31 (22.1%)	
Vocational programs				
Healthcare, Childhood and Youth development	86 (48.6%)	69 (80.2%)	17 (19.8%)	
Design, Arts and Crafts	48 (27.1%)	36 (75.0%)	12 (25.0%)	
Restaurant and Food Processing	43 (24.3%)	21 (48.8%)	22 (51.2%)	.001
²Education level				
Father above 13 years	32 (17.6%)	21 (67.7%)	10 (32.3%)	
Father under 13 years	65 (35.2%)	45 (70.3%)	19 (29.7%)	
Father “don’t know”	73 (40.1%)	18 (24.7%)	55 (75.3%)	.679
Mother above 13 years	34 (18.7%)	19 (57.6%)	14 (42.2%)	
Mother under 13 years	66 (36.3%)	49 (74.2%)	17 (25.5%)	
Mother “don’t know”	69 (37.9)	53 (76.8%)	16 (23.2)	.113
General health perception	3.8 (.9)	3.7 (.9)	4.2 (.9)	.003
PA habits				
PA level in leisure (number)	2.4 (2.0)	2.1 (1.9)	3.0 (1.9)	.003
PA level in leisure (hours)	2.8 (1.6)	2.5 (1.4)	3.6 (1.7)	<.001
Like PE	4.3 (1.5)	3.9 (1.9)	5.4 (1.7)	<.001
Screen time; (hours)	4.8 (1.5)	5.0 (1.4)	4.3 (1.6)	.003
³ Participate in PE; junior high	134 (79.3%)	92 (76.0%)	41 (87.2%)	.109
Grade; PE	3.0 (1.8)	2.8 (1.7)	3.6 (1.9)	.008
Stage of Change	3.1 (1.3)	2.8 (1.1)	3.7 (1.4)	<.001

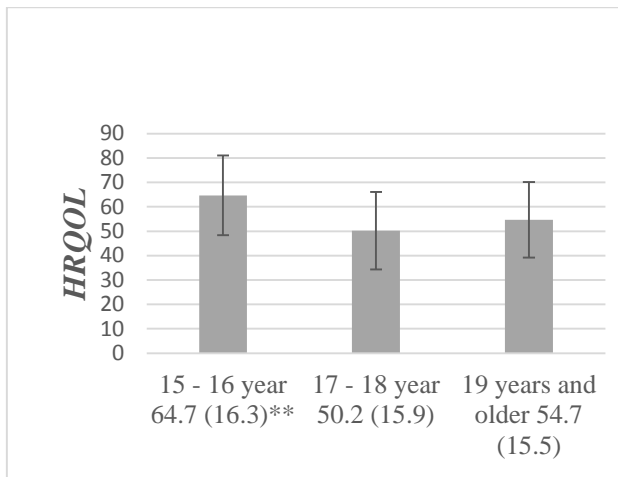
Continuous variables are expressed as mean and standard deviation (SD). Categorical variables are expressed with number and percentage (%). In the group comparison, independent sample *t* – tests were used for continuous variables and chi – squared tests were used for categorical variables. ¹Age was non-normal in distribution, and are expressed as mean and with standard deviation (SD), however in the group comparison Mann – Whitney *U* – test were used. ²Educational level father/mother presented as number and percentage (%) with `education level above/under 13 years`, `don’t know` signify the student that was unsure of parents education level. ³Participate in PE; junior high presented as number and percentage (%) with the students that participated `occasionally or regularly`. Physical education (PE). Physical Activity (PA).

Table 2. Mean scores and standard deviation in Health Related Quality of Life (HRQOL) and Adolescents Life Goals Profile Scale (ALGPS), in “motion enjoyment” and “sport enjoyment”

	Total	“Motion enjoyment”	“Sport enjoyment”	<i>p</i> - value
<i>HRQOL</i>	61.0 (17.0)	58.9 (16.7)	66.6 (16.7)	.008
<i>ALGPS</i>				
Perceived Importance				
Relation	3.7 (.9)	3.7 (.9)	3.6 (.9)	.344
Generativity	3.6 (.9)	3.7 (1.0)	3.5 (1.1)	.321
Religion	3.0 (1.2)	3.1 (1.2)	2.7 (1.4)	.070
Achievement	3.3 (1.0)	3.3 (1.0)	3.3 (1.0)	.990
Perceived Attainable				
Relation	3.6 (.9)	3.6 (.9)	3.6 (.9)	.887
Generativity	3.4 (.8)	3.4 (.8)	3.3 (.8)	.615
Religion	3.0 (1.1)	3.1 (1.1)	2.7 (1.1)	.051
Achievement	3.1 (.8)	3.1 (.8)	3.1 (.9)	.844

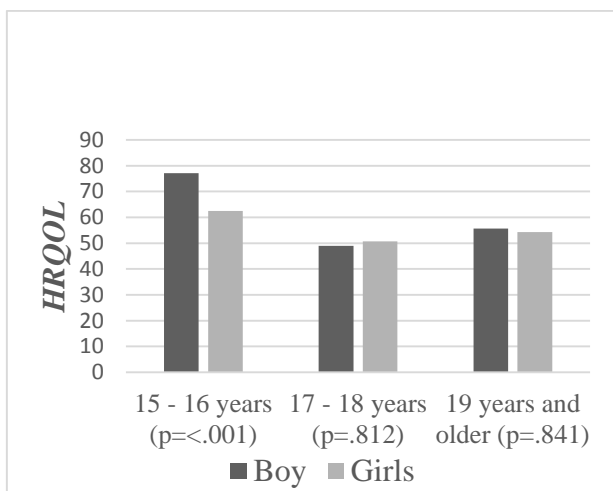
Continuous variables are expressed as the mean and with standard deviation (SD). In the group comparison, independent sample t – tests were used. Health Related Quality of Life (HRQOL) were measured with KIDSCREEN – 10 (range 0 – 100). Adolescents Life Goal Profile Scale measure life goals (ALGPS).

Figure 1. One way – ANOVA for age groups comparisons with HRQOL



In the group – comparisons, One-Way ANOVA comparison with HRQOL. Health related Quality of Life (HRQOL range 0 - 100). **p < .001

Figure 2. T – test for gender comparisons in age groups with HRQOL



In the group comparisons, split file among age groups, and perform independent sample t – tests for gender and HRQOL. Health Related Quality of Life (HRQOL range 0 – 100).

Table 3. Association between life goals, demographics and HRQOL in the high school students.

Demographic	Full model			Final model		
	Adjusted B	95% CI	p - value	Adjusted B	95 % CI	p - value
Girls	(-)5.103	(-)11.746 – 1.540	.131			
Boy	Ref					
Age	(-)1.238	(-)2.225 – (-).251	.014	(-)1.090	(-)2.028 – (-).153	.023
“Motion enjoyment”	(-) 6.290	(-)11.922 – (-).658	.029	(-)7.449	(-)12.748– (-)2.149	.006
“Sport enjoyment”	Ref			Ref		
ALGPS						
Perceived Importance						
Relation	(-)3.282	(-)8.780 – 2.216	.240			
Generativity	2.598	(-)3.011 – 8.207	.362			
Religion	(-)3.055	(-)7.019 – .909	.130			
Achievements	.822	(-)3.776 – 5.420	.724			
Perceived Attainable						
Relation	5.819	.102 – 11.537	.046	3.147	(-).304 – 6.598	.074
Generativity	(-)1.377	(-)7.612 – 4.857	.663			
Religion	3.837	(-).529 – 8.202	.085			
Achievements	2.329	(-)2.998 – 7.657	.389	4.286	.800 – 7.773	.016
F (df)	4.11 (11)			9.49 (4)		
Adjusted R Square	17.1%			17.0%		

Adjusted unstandardized regression coefficient, 95% CI, p values and R² for the full and final model using multiple backward regression analysis. Dependent variables Health Related Quality of Life (HRQOL). All variables are continuous variables except gender and model in PE. Adolescents Life Goal Profile Scale (ALGPS). Physical Education (PE).

Table 4. Association between self-reported PA, demographics and HRQOL in the high school students

Demographic	Full model			Final model		
	Adjusted B	95 % CI	<i>p</i> - value	Adjusted B	95 % CI	<i>p</i> - value
Gender	-1.153	(-) 7.933 – 5.627	.737			
Boy	Ref					
Age	(-)1.273	(-) 2.174 – (-).373	.006	(-)1.327	(-)2.212 – (-).442	.004
Healthcare, Childhood and Youth development / Design, Arts and Crafts	(-)2.726	(-) 5.893 – .441	.091	(-)3.201	(-)6.169 – (-).233	.035
Restaurant and Food Processing	Ref					
“Motion enjoyment”	(-)2.648	(-) 8.726 – 3.429	.391			
“Sport Enjoyment”	Ref					
Like PE	1.415	(-) .070 – 2.899	.062	1.859	.546 – 3.173	.006
PA in leisure; (number)	.652	(-) 1.025 – 2.329	.444	1.079	(-).199 – 2.358	.097
Stage of change	.991	(-)1.792 – 3.773	.483			
Screen time	(-)1.314	(-)2.957 - .330	.116	(-)1.387	(-)3.005 – .231	.092
F (df)	4.98 (8)			7.68 (5)		
Adjusted R Square	16.4 %			17.1%		

Adjusted unstandardized regression coefficient, 95% CI, *p* values and R² for the full and final model using multiple backward regression analysis. Dependent variables Health Related Quality of Life (HRQOL). All variables is consider as continuous variables except gender, vocational programs and model in PE. Physical Education (PE). Physical Activity (PA).

Part III

APPENDIX

Julie Sigvartsen

University of Agder

2015

Appendix

Appendix I. NSD approval

Appendix II. KIDSCREEN – 10 questionnaire: Norwegian version

Appendix III. ALGPS questionnaire: Norwegian version

Appendix VI. Self-reported physical activity variables

Appendix I. NSD approval

Norsk samfunnsvitenskapelig datatjeneste AS

NORWEGIAN SOCIAL SCIENCE DATA SERVICES



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www.nsd.uib.no
Org.nr. 985 321 884

Vår dato: 30.09.2013

Vår ref: 35639 / 2 / LT

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 25.09.2013. Meldingen gjelder prosjektet:

<i>35639</i>	<i>Kroppsovingsglede</i>
<i>Behandlingsansvarlig</i>	<i>Universitetet i Agder, ved institusjonens øverste leder</i>
<i>Daglig ansvarlig</i>	<i>Eirik Abildsnes</i>

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://pvo.nsd.no/prosjekt>.

Personvernombudet vil ved prosjektets avslutning, 31.12.2015, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Vigdis Namtvedt Kvalheim

Lis Tenold

Kontaktperson: Lis Tenold tlf: 55 58 33 77

Vedlegg: Prosjektvurdering

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Avdelingskontorer / District Offices:

OSLO: NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no

TRONDHEIM: NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. kyrre.svarva@svt.ntnu.no

TROMSØ: NSD, SVF, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 36. nsdmaa@svt.uit.no



Det gis skriftlig informasjon og innhentes skriftlig samtykke for deltakelse. For elever under 18 år innhentes også samtykke fra foresatte. Personvernombudet finner i utgangspunkt skrevet godt utformet, men forutsetter at følgende endres/tilføyes:

- etter setningen "Alle innhentede data vil slettes...." tilføyes dato 31.12.2015

Generelt er skrevet godt, men vi vil anbefale at utfyllende kapitler A og B innarbeides i selve informasjonsskrivet. Det er mye gjentakelser som etter personvernombudets vurdering ikke er nødvendig i dette prosjektet. Personvernombudet legger til grunn for sin godkjenning at revidert skriv ettersendes personvernombudet@nsd.uib før det tas kontakt med utvalget (merk eposten med prosjektnummer).

Det vil i prosjektet bli registrert sensitive personopplysninger om helseforhold, jf. personopplysningsloven § 2 nr. 8 c).

Prosjektet skal avsluttes 31.12.2015 og innsamlede opplysninger skal da anonymiseres og lydopptak slettes. Anonymisering innebærer at direkte personidentifiserende opplysninger som navn/koblingsnøkkel slettes, og at indirekte personidentifiserende opplysninger (sammenstilling av bakgrunnsopplysninger som f.eks. yrke, alder, kjønn) fjernes eller grovkategoriseres slik at ingen enkeltpersoner kan gjenkjennes i materialet.

Prosjektet er et samarbeid mellom Universitetet i Agder, Vest-Agder fylkeskommune og Kristianssand kommune, hvor førstnevnte er behandlingsansvarlig institusjon. Personvernombudet anbefaler at denne behandling/ansvarsfordeling formelt er avklart mellom institusjonene og anbefaler at det utarbeides en avtale som blant annet omfatter ansvarsfordeling, ansvarsstruktur, hvem som initierer prosjektet, bruk av data og eventuelt eierskap.

Når du tenker på den siste uka..

	Ikke i det hele tatt	Litt	Ganske	Veldig	I høy grad
Har du følt deg frisk og sprek?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du følt deg full av energi?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du følt deg trist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du følt deg ensom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du hatt nok tid for deg selv?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du kunnet velge hva du vil gjøre i fritiden din?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har moren/faren din behandlet deg rettferdig?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du hatt det gøy sammen med vennene dine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du klart deg bra på skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har du klart å følge med på skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Til vanlig, hvordan vil du si at helsen din er?

- Utmerket
- Veldig bra
- Bra
- Ganske bra
- Dårlig

Appendix III. ALGPS questionnaire: Norwegian version

De fleste av oss har langsiktige mål eller planer. Dette er ting vi håper å oppnå i løpet av livet. Nedenfor finner du en rekke slike mål.
 Kan du vurdere; A) I hvor stor grad dette målet er viktig for deg? B) I hvor stor grad dette målet er oppnåelig for deg?

På hvert spørsmål svar først på A, så på B

	A	A					B	B				
		Ikke viktig	Lite viktig	Noe viktig	Ganske viktig	Svært viktig		Ikke oppnåelig	Lite oppnåelig	Noe oppnåelig	Ganske oppnåelig	Svært oppnåelig
1	Å ha en kjæreste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Å arbeide for å gjøre verden til et bedre sted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Å få barn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Å bli veldig rik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Å være seksuelt aktiv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Å ha et "liv" etter døden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Å bli beundret av mange	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Å hjelpe mennesker som trenger det	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Å tro på en Gud	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Å kjenne et menneske å dele alt med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Å oppnå en høy utdanning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Å stadig finne nye utfordringer i livet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Å skape noe for fremtiden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Å finne meningen med livet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Å få status for noe jeg er god til	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Å omgi meg med venner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvilke karakterer hadde du ved siste karakteroppgjør i følgende fag?

Kroppsøving 6 5 4 3 2 1 Ikke karakter

Hvordan liker du kroppsøvningsfaget?

Liker ikke gym 2 3 4 5 6 Liker gym bra

Hvor ofte deltok du i kroppsøving på ungdomsskolen?

Aldri Svært sjelden Sjelden Av og til Ofte Svært ofte

Hvor mange timer ser du på TV eller driver du med PC/dataspill på en vanlig ukedag (utenom skoletid)?

- Jeg ser ikke på TV/driver med dataspill på en vanlig ukedag
- Mindre enn 1 time per dag
- 1 time per dag
- 2 timer per dag
- 3 timer per dag
- 4 timer per dag
- 5 timer eller mer per dag

De neste spørsmålene dreier seg om fysisk aktivitet som du gjør på FRITIDEN (for eksempel i helgene, på ettermiddag/kveld og i ferier). IKKE når du er på skolen. Eksempler på fysisk aktivitet er å løpe, gå fort, gå på rulleskøyter, sykle, sparkesykle, gå på ski, svømme, spille fotball eller danse. Med IDRETT/MOSJON/FYSISK AKTIVITET mener vi all fysisk aktivitet som gjør deg anpusten eller litt svett.

Utenom skoletid: Hvor mange ganger i uka driver du idrett/mosjon slik at du blir andpusten eller svett?

Omtrent hvor mange timer til sammen per uke bruker du på dette?

- 0 timer
- 1-2 timer
- 3-4 timer
- 5-6 timer
- 7 timer
- Mer enn 7 timer

I det neste spørsmålet brukes begrepet REGELMESSIG. Da mener vi 3 ganger eller mer i uka, i minst 20 minutter hver gang.

Hvilket av disse passer best for deg? (Sett ett kryss)

- For tiden er jeg ikke fysisk aktiv, og jeg har ingen planer om å bli det i løpet av de neste 6 måneder
- For tiden er jeg ikke fysisk aktiv, men jeg har tenkt å bli mer fysisk aktiv i løpet av de neste 6 måneder
- For tiden er jeg noe fysisk aktiv, men det er ikke regelmessig
- For tiden er jeg regelmessig fysisk aktiv, men det er først i de siste 6 måneder at jeg har begynt med det
- For tiden er jeg regelmessig fysisk aktiv, og jeg har vært det lengre enn 6 måneder