# EVALUATION OF THE PREGNANCY PROFILE® PROGRAM:

# A PREGNANCY SIMULATION INTERVENTION

by

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## ABSTRACT

The purpose of the present study was to determine effectiveness of the Pregnancy Profile® Program, a component of Realityworks' RealCare® Parenting Program, and furthermore, to determine whether the program significantly affects high school students' knowledge, attitudes, and beliefs about pregnancy and its many life-changing consequences. Various schools without previous experience with the Pregnancy Profile® Program were identified and contacted by the researcher. Participants consisted of 95 students enrolled in FACS or Health classes from five high schools located within the Midwestern and Western regions of the United States. Participants completed a quantitative pre-intervention assessment before the start of instruction, received one-week worth of the Pregnancy Profile® Program, including the use of a pregnancy simulator for a period of 20-minutes, and completed quantitative and qualitative post-intervention assessments upon completion of instruction. Both the results of the data analysis and the participants' own evaluation confirm the program's effectiveness such that participants

increased their knowledge of cultural beliefs and expectations, the costs of pregnancy and raising a child, the physical and emotional changes that occur with pregnancy, fetal development and good prenatal care, and the impact of pregnancy on one's life, as well as increased their awareness of personal life goals and expectations and misinformation and myths of pregnancy.

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# Introduction

In the United States, approximately 750,000 to 850,000 adolescents experience pregnancy annually, moreover 40 percent of all pregnancies involve adolescents 17 years of age or younger (Hellerstedt, 2000b; Moss, 2004). Of these pregnancies, approximately 425,000 result in birth (March of Dimes, 2004). At this rate, one in three adolescents experience pregnancy at least once before reaching 20 years of age, 74 to 95 percent being unintentional (Moss, 2004; The National Campaign to Prevent Teen Pregnancy, 2006). Although the rate of adolescent pregnancy has declined steadily since 1991, the United States continues to hold the highest rates of adolescent pregnancy than any other industrialized nation. Adolescent pregnancy and parenthood is a complex issue associated with a wide range of adverse consequences affecting both the adolescent parent and their child.

## *Statement of the Problem*

Prevention programs can be an important component in addressing the problem of adolescent pregnancy in which many models exist (Klein & Committee on Adolescence, 2005; Kirby, 2001). Because the reasons leading to adolescent pregnancy vary, so do the types of programs designed to battle the problem, typically thought of are sex or abstinence education classes or clinics (Kirby, 2001). The Pregnancy Profile® Program is a device-based intervention comprised of a pregnancy simulator and corresponding curriculum, allowing participants to personally experience the physical symptoms of pregnancy, examine a variety of other aspects of pregnancy, assess personal readiness and ability to provide for a child, and analyze the impact of pregnancy on one's life.

Local decisions about programming are often affected by effectiveness research (Kirby, 2001). According to Dr. Douglas Kirby, Senior Research Scientist at ETR Associates:

> Professionals working with youth should not adopt simplistic solutions with little chance of making a dent on the complex problem of teen pregnancy. Instead, they should be encouraged by declining rate and new research showing that some programs are making a difference. They should continue to explore many ways to address the various causes of teen pregnancy. They should replicate those programs that have the best evidence for success, build their efforts around the common elements of successful programs, and continue to explore. develop, and evaluate innovative and promising approaches. (p.19)

The Pregnancy Profile® Program presently lacks the effectiveness research needed for Realityworks' customers and prospects to make the appropriate decisions when making plans to purchase the program and furthermore, implement the Pregnancy Profile® Program into their classroom.

*Purpose of the Study*

The purpose of the present study was to determine effectiveness of the Pregnancy Profile® Program, a component of Realityworks' RealCare® Parenting Program, and furthermore, to determine whether the Pregnancy Profile® Program significantly affects high school students' knowledge, attitudes, and beliefs about pregnancy and its many life-changing consequences. Determining effectiveness of the program will allow Realityworks' customers and prospects to make the appropriate decisions when making plans to purchase the program and furthermore, implement the Pregnancy Profile® Program into their classroom.

*Assumptions of the Study*

The basic assumption underlying the present study was that all instructors covered the required material as outlined by the researcher. This included administering the pre-intervention assessment before the start of instruction, conducting the one-week worth of required Pregnancy

Profile® Program lessons and activities, insuring that all participants wore a pregnancy simulator for a period of 20-minutes, and administering the post-intervention assessments upon completion of instruction.

*Definition of Terms*

*Amniocentesis.* "Procedure between the 16th and 20th week of pregnancy to detect fetal defects; the amniotic sac is punctured with a needle and syringe and amniotic fluid is obtained for analysis" (Alexander, LaRosa, & Bader, 2001, p. 488).

*Anemia.* "A pathological deficiency in the oxygen-carrying component of the blood" (Berube et al., 1994, p. 31).

*Braxton-Hicks contractions.* "The contraction of the uterus at irregular intervals throughout pregnancy. These contractions are not like 'real' labor contractions in that they do not gradually increase in frequency, intensity, or duration" (Alexander et al., 2001, p. 491).

*Cerebral palsy.* "A disorder caused by brain damage at or before birth and marked by muscular impairment and often poor coordination" (Berube et al., 1994, p. 144).

*Dyslexia.* "A learning disorder marked by impairment of the ability to read" (Berube et al., 1994, p. 265).

*Ectopic pregnancy.* "Result of implantation of a fertilized egg outside the uterus" (Alexander et al., 2001, p. 497).

*Hypertension.* "A blood pressure that remains elevated above what is considered a safe level" (Alexander et al., 2001, p. 502).

*Jaundice.* "A condition in which accumulation of pigments in the blood produces a yellowing of the skin and eyes" (Alexander et al., 2001, p. 504).

*Medicaid.* "A U.S. government program that pays for medical care for people who cannot finance their own medical expenses" (Berube et al., 1994, p. 519).

*Miscarriage.* "A pregnancy that terminates before the 20$^{th}$ week of gestation because of fetal defects or pregnancy problems" (Alexander et al., 2001, p. 506).

*Obesity.* "The excessive accumulation of fat in the body; a condition of being 20 percent or more above ideal weight" (Alexander et al., 2001, p. 508).

*Realityworks, Inc.* The creators and manufacturers of educational products that promote healthy choices through experiential learning, used in a variety of fields such as life skills, parenting, social services, and health care (Realityworks, Inc., n.d.).

*Sudden infant death syndrome (SIDS).* "The unexpected death of a seemingly healthy infant, usually occurring within the first year of life, and in the infant's sleep" (Alexander et al., 2001, p. 515).

*Ultrasound.* "A procedure which uses high-frequency sound waves to project an image of structures inside the body, such as organs or a fetus during pregnancy" (Alexander et al., 2001, p. 517).

*Varicose veins.* "Abnormally swollen or knotted veins" (Berube et al., 1994, p. 889).

*Youth Risk Behavior Surveillance System (YRBSS).* National, state, and local school-based surveys, conducted every two years, to monitor priority health risk behaviors among youth within the United States (Centers for Disease and Control and Prevention, n.d.).

*Limitations of the Study*

There were several limitations to the present study. Teaching styles and furthermore, knowledge of the topic among the instructors may have varied, creating differences among the participants' post-intervention knowledge and attitudes. Similarly, the instructors' lack of familiarity with the Pregnancy Profile® Program, including the required lessons and activities, most likely created an environment not representative of typical classroom instruction. In addition, program materials were limited to one-week and although the researcher selected a representative sampling of the curriculum, the program was not tested in its entirety. Lastly, the use of students enrolled in Family and Consumer Science (FACS) courses most likely were not

representative of the typical high school population such that most FACS courses are elective, often selected by students with particular interest in topics such as parenting.

*Methodology*

Upon review of the Pregnancy Profile® Program and corresponding program outcomes, three instruments, Pregnancy Profile® Program Survey, I, II, and II, were developed by the researcher then submitted for review by the Institutional Review Board (IRB). Upon approval, various schools without previous experience with the Pregnancy Profile® Program were identified and contacted by the researcher. Participants consisted of 95 students enrolled in FACS or Health classes from five high schools located within the Midwestern and Western regions of the United States. Participants providing consent and receiving parent/guardian permission completed the quantitative pre-intervention assessment before the start of instruction, received one-week worth of the Pregnancy Profile® Program, including the use of a pregnancy simulator for a period of 20-minutes, and completed quantitative and qualitative post-intervention assessments upon completion of instruction. Quantitative data was analyzed using the Statistical Program for Social Sciences (SPSS) version 11.5, while qualitative data was reviewed, coded, and categorized into themes by the researcher.

# Literature Review

## *Adolescent Pregnancy in the United States*

Typically marrying at 26 to 28 years of age, adolescents who choose to engage in sexual intercourse live nearly a decade at risk of unintentional adolescent pregnancy (Dillard, 2002; Guttmacher Institute, 2006). In the United States, adolescents typically first engage in sexual intercourse at 17 years of age although, 6.6 percent of adolescents report initiating in the activity before the age of 13 (Alford, 2004; Dillard, 2002; Guttmacher Institute, 2006). As a result, 46 percent of all adolescents, ages 15 to 19, have engaged in sexual intercourse at least once, seven in ten adolescents by the age of 19 (Guttmacher Institute, 2006). Although, the majority of sexually active adolescents use at least one form of contraceptive, 50 percent of adolescent pregnancies occur within six months of initial sexual intercourse (Guttmacher Institute, 2006; Klein & Committee on Adolescence, 2005). Those adolescents that do not use contraceptives have a 90 percent chance of becoming pregnant within one year (Guttmacher Institute, 2006; Hurley, 2000).

In the United States, approximately 750,000 to 850,000 adolescents experience pregnancy annually, moreover 40 percent of all pregnancies involve adolescents 17 years of age or younger (Hellerstedt, 2000b; Moss, 2004). Of these pregnancies, approximately 425,000 result in birth (March of Dimes, 2004). At this rate, one in three adolescents experience pregnancy at least once before reaching 20 years of age, 74 to 95 percent being unintentional (Moss, 2004; The National Campaign to Prevent Teen Pregnancy, 2006). Although the rate of adolescent pregnancy has declined steadily since 1991, the United States continues to hold the highest rates of adolescent pregnancy than any other industrialized nation. Adolescent pregnancy and

parenthood is a complex issue associated with a wide range of adverse consequences affecting both the adolescent parent and their child.

*Trends in Adolescent Pregnancy*

In the United States, poverty is significantly correlated with adolescent pregnancy (Klein & Committee on Adolescence, 2005). Eighty-three percent of adolescent parents live in poor or low-income families, 60 percent living in poverty at the time of birth (Klein & Committee on Adolescence, 2005; Moss, 2004). With approximately one-fourth of adolescent parents having a second child within 24 months of the birth of their first child, escaping their life of poverty may be extremely difficult (The National Campaign to Prevent Teen Pregnancy, 2001). Adolescent parents with more than one child tend to have greater difficulties living above poverty than adolescents with only one child or adolescents delaying parenthood until later in life. Moreover, nearly half of all adolescent parents receive welfare aid within five years of the birth of their first child and 52 percent of all mothers currently receiving welfare gave birth to their first child during adolescence (The National Campaign to Prevent Teen Pregnancy 2001, 2006).

Approximately one-third of adolescent parents are products of adolescent pregnancy themselves (Klein & Committee on Adolescence, 2005). As a result, most of these youth may have spent much of their young lives with only one parent for adolescent parents generally spend most of their young adult lives as single parents (The National Campaign to Prevent Teen Pregnancy, 2001). Children in single parent families are 2.5 times as likely to become adolescent parents as well as twice as likely to drop out of school and 1.4 times as likely to be out of school and without work simultaneously. In addition, these children are more likely to have lower grade point averages, poorer school attendance, and lower higher education aspirations than children from two-parent families.

Among all adolescent pregnancies, 30 to 50 percent involve a father younger than 20 years of age (Committee on Adolescence & Committee on Early Childhood, Adoption, and Dependent Care, 2001). Adolescent fathers are more likely to live in poverty than adolescent mothers, 64 percent living with a parent or close relative. Furthermore, 80 percent of adolescent fathers do not marry the young mother and only 36 percent of adolescent mothers report daily contact with the father of their child during the first few months of the child's life (Committee on Adolescence & Committee on Early Childhood, Adoption, and Dependent Care, 2001; Edelson, 1999; The National Campaign to Prevent Teen Pregnancy, 2007d). Later in life, paternal support decreases as only 20 percent of adolescent mothers report daily contact with the father, thus continuing the cycle of single-parenthood and increasing the child's odds of becoming an adolescent parent themselves (Edelson, 1999; The National Campaign to Prevent Teen Pregnancy, 2001). Similar to the adolescent mother, adolescent fathers are more likely to drop out of school and academically perform poorly, thus decreasing income potential (Card & Nelson-Kilger, 1994; Edelson, 1999; Klein & Committee on Adolescence, 2005).

*Medical Risks of Adolescent Pregnancy*

Pregnant adolescents and their children have a greater risk of experiencing medical complications than do adult women and their children, especially among the youngest pregnant adolescents 14 years of age and younger (Klein & Committee on Adolescence, 2005). Adolescent pregnancy has been associated with poor maternal weight gain, pregnancy-induced hypertension, anemia, and sexually transmitted diseases, premature birth, low birth weight, neonatal death, and maternal death (Klein & Committee on Adolescence, 2005; The National Campaign to Prevent Teen Pregnancy, 2006). In addition, later in life, adolescent mothers are

more likely to experience obesity and hypertension than women who delayed childbearing until adulthood (The National Campaign to Prevent Teen Pregnancy, 2006).

Perhaps due to poverty, lack of education, and inaquedate family support, pregnant adolescents, compared to all maternal ages, are the least likely to receive adequate prenatal care, thus their children are less healthy and at greater risk of experiencing medical complications than those born to older parents (Committee on Adolescence & Committee on Early Childhood, Adoption, and Dependent Care, 2001; Edelson, 1999; March of Dimes, 2004). Nearly 30 percent of adolescent parents receive inadequate prenatal care; seven percent receive late or no prenatal care (Edelson, 1999; Guttmacher Institute, 2006). Moreover, approximately 66 percent of pregnant adolescents receive first-trimester prenatal care compared to 84 percent of pregnant adults (Hellerstedt, 2000a).

Adolescents generally acquire unhealthy eating habits and neglect to take vitamins, both contributing to the nature of an adolescent's pregnancy and childbearing experience (March of Dimes, 2004). Pregnant adolescents embrace eating habits similar to non-pregnant adolescents, generally only eating food that is readily available, affordable, and appealing (Story & Moe, 2000). According to the 2005 Youth Risk Behavior Surveillance System (YRBSS), only 20.1 percent of adolescents nationwide eat the recommended daily amount of fruits and vegetables and 16.2 percent drink the recommend daily amount of milk (Centers for Disease Control and Prevention [CDC], 2006). In addition, adolescents, including those who are pregnant, tend to skip meals and frequently snack on hi-fat, hi-sugar, and low-nutritional value foods, including those that are convenient and fast (Story & Moe, 2000). As a result, adolescents are more likely than adults to be of inadequate pre-pregnancy weight (March of Dimes, 2004). In addition,

adolescents are less likely to gain the recommended 25 to 35 pounds during pregnancy, thus increasing the chances of delivering a child of low birth weight.

The adolescent's indulgence in tobacco, alcohol, and other drugs also impact the unborn child if usage persists during pregnancy (March of Dimes, 2004). The 2005 YRBSS characterized 28.4 percent of adolescents as current tobacco users and 43.3 percent as current alcohol users (CDC, 2006). Sexual risk-taking, including behaviors resulting in adolescent pregnancy, is significantly correlated with the use of legal and illegal substances (Hellerstedt, 2000a). More than one-third of sexually active adolescents report that substance use has influenced them to do something sexual and moreover, nearly one-quarter of all high school students used alcohol or drugs prior to their most recent sexual experience (The National Campaign to Prevent Teen Pregnancy, 2007e). As a result, adolescents may be more likely than adults to use tobacco, alcohol, and other drugs during pregnancy; in particular 11 to 55 percent of pregnant adolescents use legal and illegal substances while pregnant (Alton, 2000; Hellerstedt, 2000a).

With tobacco being the most commonly used substance during pregnancy, pregnant adolescents are more likely to smoke cigarettes than those over the age of 25 (Alton, 2000; March of Dimes, 2004). Although the risk of complications increases with the number of cigarettes, adverse consequences may occur by smoking as little as five cigarettes a day (Alton, 2000). Medical complications correlated with tobacco usage include ectopic pregnancy, premature birth, and neonatal death as well as doubling the adolescent's risk of delivering a child of low birth weight, accounting for 20 to 30 percent of low birth weight children in the United States (Alton, 2000; Edelson, 1999; March of Dimes, 2004). In addition, within the first few

years of life, children of smoking mothers are twice at risk of sudden infant death syndrome, or SIDS than those born to nonsmoking parents (Edelson, 1999).

Alcohol, commonly used among pregnant adolescents, equally affects the child of the parent who uses (Alton, 2000). As little as one drink a day may have adverse consequences for the child including irritability, hyperactivity, sleep disturbances, poor judgment, learning disabilities, including attention deficit disorder, delayed fine motor development, and feeding difficulties. Alcohol consumption during pregnancy also increases the child's risk of fetal alcohol syndrome, or FAS (Edelson, 1999). Children with FAS never fully develop having small heads, abnormal facial features, little or no control of muscles, severe heart defects, and extreme behavioral problems including hyperactivity, nervousness, and short attention spans. In addition, FAS is the number one cause of mental retardation.

A pregnant adolescent's rate of delivering a child of low birth weight is more than double than the rate for an adult woman (Klein & Committee on Adolescence, 2005). Similarly, pregnant adolescents are more likely to give birth prematurely, delivering before 37 weeks (March of Dimes, 2004). More than 7,000 pregnant adolescents are twice as likely to deliver prematurely, increasing their child's risk of experiencing a number of health problems and possibly even death. Children weighing less than 5.5 pounds at birth are at greater risk of blindness, deafness, anemia, jaundice, chronic respiratory problems, cerebral palsy, various behavioral problems, and learning disabilities, including an increased risk of a lower IQ (Card & Nelson-Kilger, 1994; Edelson, 1999; The National Campaign to Prevent Teen Pregnancy, 2001, 2006). In addition, low birth weight doubles a child's chances of dyslexia, hyperactivity, or other life-altering disabilities. Children of low birth weight are also 20 times more likely to die within their first year of life (March of Dimes, 2004; Moss, 2004).

Despite more health problems and a greater risk of injury, the children of adolescent parents often receive less medical care and treatment than the children of adult parents (Hellerstedt, 2000a; The National Campaign to Prevent Teen Pregnancy, 2001, 2006). Within the first 14 years of life, children of adolescent parents visit medical providers an average of 3.8 times a year while children of adult parents seek medical care an average of 4.3 times a year. In addition, when seeking medical care, the children of adolescent parents more likely depend on various public programs (The National Campaign to Prevent Pregnancy, 2007b). In particular, public programs cover approximately 84 percent of healthcare expenses for adolescent parents with children ages zero to one while three-quarters of expenses are covered for adolescent parents with pre-school aged children. In total, the children of adolescent parents utilize nearly two billion dollars each year in health and medical care using public programs such as Medicaid.

*Psychosocial Risks of Adolescent Pregnancy*

Children of adolescent parents often also receive inadequate parenting (The National Campaign to Prevent Teen Pregnancy, 2001, 2006). The adolescent parents, still growing and developing themselves, are often unable to provide an environment optimal for infant development, lacking adequate nurturing and stimulation in the first three years of life. Adolescent parents less often vocalize, touch, and smile at their child, and furthermore, embrace unrealistic developmental expectations and are less sensitive and accepting of their child's behavior (Committee on Adolescence & Committee on Early Childhood, Adoption, and Dependent Care, 2001). As a result, once reaching an age to begin school, children of adolescent parents often perform poorly academically (Hellerstedt, 2000a; The National Campaign to Prevent Teen Pregnancy, 2006). These children are 50 percent more likely to repeat a grade level, performing significantly worse on standardized tests and furthermore, 10 times more likely

to dropout of school (March of Dimes, 2004; The National Campaign to Prevent Teen Pregnancy, 2001, 2006). In addition, scoring lower on cognition, knowledge, and language assessments, children born to adolescent parents are less likely to independently read easy books and demonstrate an early writing ability (The National Campaign to Prevent Teen Pregnancy, 2007a, 2007c).

Lacking child development and parenting knowledge, the child of an adolescent parent is at greater risk of becoming a victim of abuse and neglect (Committee on Adolescence & Committee on Early Childhood, Adoption, and Dependent Care, 2001; Hellerstedt, 2000a; The National Campaign to Prevent Teen Pregnancy, 2006). Becoming frustrated by constant demands and role uncertainties, there are approximately 110 reported child abuse and neglect incidents per 1,000 families lead by an adolescent parent, compared to 51 reported incidents per 1,000 families lead by a parent who delayed parenthood until becoming an adult (American Academy of Child and Adolescent Psychiatry, 2004; The National Campaign to Prevent Teen Pregnancy, 2001, 2006).

Future prospects for adolescent parents also significantly decline in comparison to adolescents without children (The National Campaign to Prevent Teen Pregnancy, 2006). Adolescent parenthood is the number cause of school dropouts, with approximately 40 percent of adolescent parents ever graduating from high school compared to three-quarters of adolescents who delay childbearing until adulthood (The National Campaign to Prevent Teen Pregnancy, 2007a). Furthermore, less than two percent have received a college degree by the age of 30. As a result, adolescent parents miss the opportunity to learn various employment and self-survival skills, thus more likely to experience limited career and economic opportunities compared to those delaying childbearing until later in life (American Academy of Child and Adolescent

Psychiatry, 2004; Moss, 2004). Consequently, adolescent parents report more stress and depression than adolescents without children due to feelings of failure and low self-esteem (Hellerstedt, 2000a).

*Adolescent Pregnancy Prevention*

Prevention programs can be an important component in addressing the problem of adolescent pregnancy in which many models exist (Klein & Committee on Adolescence, 2005; Kirby, 2001). Because the reasons leading to adolescent pregnancy vary, so do the types of programs designed to battle the problem, typically thought of are sex or abstinence education classes or clinics (Kirby, 2001). No single program could, or should, try to address all precursors of adolescent pregnancy and childbearing yet, at the same time, the most effective programs focus deliberately on several in a clear, purposeful way. Moreover, the most successful interventions include multiple, varied approaches covering information such as abstinence, contraceptive promotion and availability, sex education, school-completion strategies, and job training (Klein & Committee on Adolescence, 2005).

Although no single approach can solve the problem of adolescent pregnancy, adolescent pregnancy prevention programs are most often school-based due to adolescents' accessibility and somewhat attentive nature (Kirby, 2001; Moore et al., n.d.). Nearly every adolescent in the United States receives some form of traditional school-based sex or abstinence education, either abstinence-only or comprehensive (Kirby, 2001). Most abstinence-only programs emphasize abstinence, while others discuss types of contraceptives but focus on their failure rates. Likewise, most comprehensive sex education programs depict abstinence as the safest and best option, but other types of contraceptives are discussed and encouraged. These traditional school-based programs have been proven to increase adolescents' sexual knowledge, but have little or no

effect on whether or not adolescents' initiate sexual activity or use contraception thus the effects of school-based sex education continues to be widely debated (Moore et al., n.d.). In addition, school-based programs do not reach adolescent school drop-outs and/or older adult partners.

While school districts provide sex education, many communities also provide community-based programs customized especially for individuals whose needs are not adequately met in a school environment, meeting the particular needs of specific groups in the community (Advocates for Youth, 2003). Programs typically include media campaigns, family planning and contraception services, sex education classes, and parent/child communication training (Kirby, 2001). These community-based programs have been proven to affect adolescents throughout the entire community, not just those directly served although, the effects of these programs only last as long as the program is maintained and may not provide positive results within other communities.

Producing more favorable results, skill-oriented prevention programs, or youth development programs, combine the traditional knowledge approach with skill development activities (Kirby, 1997; Moore et al., n.d.). Skill-oriented prevention programs are generally active rather than passive, helping adolescents personalize content and develop negotiation and refusal skills with respect to sexual behavior and contraceptive use (Moore et al, n.d.). Two main components include weekly classroom discussions of topics such as personal values, decision-making, communication, human growth and development, parenting, family relationships, life options, and community resources, and school and/or community volunteer service with preparation and reflection before, during, and after volunteering experiences (Kirby, 1997, 2001). Providing social competency, school readiness, and/or skills training or service learning opportunities, these nontraditional skill-based programs have been proven to positively impact

sexual health outcomes among adolescents, delaying adolescents' onset of sexual intercourse for a short period of time and moderately increasing use of contraceptives (Advocates for Youth, 2003; Moore et al, n.d.).

*The Pregnancy Profile® Program: A Pregnancy Simulation Intervention*

To increase the number of informed, mature young parents and healthy infants born to young parents as well as to increase the use of contraceptives among sexually active adolescents and reduce the rate of sexual activity among adolescents are the desired, long-term outcomes of the Pregnancy Profile® Program, a component of Realityworks' RealCare® Parenting Program. The Pregnancy Profile® Program, geared towards middle and/or high school students, is a device-based intervention comprised of a pregnancy simulator and corresponding curriculum, allowing participants to personally experience the physical symptoms of pregnancy, examine a variety of other aspects of pregnancy, assess personal readiness and ability to provide for a child, and analyze the impact of pregnancy on one's life.

The pregnancy simulator, or Pregnancy Profile® Vest, replicates the third trimester of pregnancy in which participants personally experience the physical symptoms of pregnancy including the approximate 25 pound weight gain, enlarged belly and breasts, restricted breathing, fetal movement, pressure of fetal limbs, elevated body temperature, difficulty performing daily tasks, and increased fatigue. In particular, the simulator's adjustable rib constrictor simulates shallowness of breath and fetal limb pressure while the refillable bladder with suspended weight simulates mild fetal movement and raised body temperature when filled with warm water. In addition, a weighted bag applies pressure to the participant's bladder.

The corresponding 10 lesson curriculum helps participants learn about the many life-changing consequences of pregnancy and their level of readiness of becoming a parent. Through

various classroom activities, transparencies, and associated worksheets, participants identify personal life goals and expectations, describe the physical and emotional changes that occur during pregnancy, identify the stages of fetal development, analyze healthy and unhealthy habits and their effect on the unborn child, identify the medical aspects of good prenatal care, analyze the myths of pregnancy, compare and contrast cultural beliefs and expectations, analyze the importance of a positive father role in a healthy pregnancy, determine the costs of pregnancy and raising a child, assess personal readiness and ability to provide for a child, and analyze the impact of pregnancy on one's life. Along with classroom instruction, participants, both male and female, wear the Pregnancy Profile® Vest, with accompanying t-shirt, for at least a one 20-minute period. While wearing the pregnancy simulator curriculum activities guide participants through conducting various physical activities, such as sitting down and standing up, and discussing the participants' physical and emotional observations.

Program materials include the Pregnancy Profile® Vest with rib constrictor, water bladder, and weight bag, Pregnancy Profile® Program curriculum with 10 lesson plans including classroom activities, transparencies, and associated worksheets, one-size-fits-all embroidered t-shirt, and carrying/storage case (see Appendix for logic modeling of program).

# Methodology

In the United States, approximately 750,000 to 850,000 adolescents experience pregnancy annually, moreover 40 percent of all pregnancies involve adolescents 17 years of age or younger (Hellerstedt, 2000b; Moss, 2004). Adolescent pregnancy and parenthood is a complex issue associated with a wide range of adverse consequences affecting both the adolescent parent and their child. Prevention programs can be an important component in addressing the problem of adolescent pregnancy in which many models exist (Klein & Committee on Adolescence, 2005; Kirby, 2001). The Pregnancy Profile® Program, a device-based intervention comprised of a pregnancy simulator and corresponding curriculum, presently lacks the effectiveness research needed for Realityworks' customers and prospects to make the appropriate decisions when making plans to purchase the program and furthermore, implement the Pregnancy Profile® Program into their classroom.

To determine the effectiveness of the Pregnancy Profile® Program the present study was conducted. The sections below address subject selection and description, instrumentation, data collection procedures, data analysis, and study limitations.

## *Subject Selection and Description*

Various schools without previous experience with the Pregnancy Profile® Program were identified by the researcher using a customer/prospect database owned by Realityworks, Inc. Potential participants were contacted via email by the researcher. Based on willingness to participate, five high schools located within the Midwestern and Western regions of the United States were selected to participate in the present study during Spring 2006.

Participants consisted of 95 students enrolled in FACS or Health classes. The majority of participants were female (77.9 percent, $n = 74$) and ranged from 14 to 19 years of age.

Correspondingly, participants were fairly equal across grade level with 23 (24.2 percent) in the ninth grade, 10 (10.5 percent) in the tenth grade, 34 (35.8 percent) in the eleventh grade, and 28 (29.5 percent) in the twelfth grade. Participants were primarily Caucasian (81.1 percent, $n = 77$) with the remaining consisting of six (6.3 percent) Asian, six (6.3 percent) Hispanic, and one (1.1 percent) Native American, while five (5.3 percent) students indicated "other."

*Instrumentation*

Program outcomes were measured with three instruments developed by the researcher: Pregnancy Profile® Program Survey I, II, and III. Quantitative instruments, Surveys I and II, were identical although Survey I, the pre-intervention assessment, included 11 demographic questions. Survey II served as a post-intervention assessment. Survey III, a qualitative instrument, served as an additional post-intervention assessment, consisting of four open-ended questions. All items were developed by the researcher after review of the Pregnancy Profile® Program curriculum and program desired outcomes.

The 11 demographic questions, located within the first section of Survey I, assessed participants' gender, date of birth, grade, and ethnicity as well as current living arrangements, highest level of education completed by their parents or guardians, number of siblings, and birth order. Lastly, participants were also asked "Do you have any children" and "Have you ever worn a pregnancy simulator."

Surveys I and II consisted of 12 multiple-choice knowledge questions to assess participant knowledge of pregnancy. Item one, "Which is not a symptom or discomfort of pregnancy," assessed participants' knowledge of the physical changes that occur with pregnancy. Items two through five, "During what trimester does a baby gain the most weight," "During what trimester do a baby's fingernails and fingerprints appear," "During what trimester do a baby's

major organs and systems form," and "How many brain cells does a baby have at birth," assessed participants' knowledge of fetal development. Item six, "Which of the following is a truth about pregnancy," assessed participants' knowledge of misinformation and myths of pregnancy. Items seven through eleven, "A medical doctor who specializes in the care of pregnant women and delivering babies is called," "During the first seven months of pregnancy, an expectant mother visits her doctor how often," "Which of the following can not be determined by an ultrasound," "Which of the following is false about amniocenteses," and "Pregnant women must immediately report," assessed participants' knowledge of good prenatal care. Lastly, item 12, "Approximately how much does it cost for a middle-income family to raise one child 18 years," assessed participants' knowledge of the costs of raising a child. Each item provided four or five answer choices, one being "I do not know."

Surveys I and II also consisted of 14 attitudinal/opinion five-point Likert-scale questions, ranging from 5 = strongly agree to 1 = strongly disagree, to assess participant attitudes/opinions of pregnancy. Items one through three, "I am ready to have a baby," "I would be upset if I found out I (or my girlfriend) became pregnant," and "An infant needs a safe, secure environment filled with loving care," assessed participants' personal readiness and ability to provide for a child. Item four, "I could afford to raise a baby," assessed participants' financial readiness to raise a child. Items five and six, "My future plans would be altered if I (or my girlfriend) became pregnant" and "My personal values would be violated if I (or my girlfriend) became pregnant," assessed participants' personal life goals and expectations as well as the impact of pregnancy on one's life. Items seven and eight, "Parent needs are more important than children needs" and "A parent must make daily sacrifices in order to financially support their children," assessed participants' personal readiness and ability to provide for a child as well as the impact of

pregnancy on one's life and financial readiness to raise a child. Items nine and ten, "It is important for the father to participate in the pregnancy" and "It is important for the father to participate after the child is born," assessed participants' awareness of a positive father figure. Items 11 through 13, "Pregnancy can often cause stress on relationships with others," "A women's body goes through tremendous changes during pregnancy," and "It is difficult to perform daily tasks when pregnant," assessed participants' awareness of the physical and emotional changes that occur with pregnancy as well as the impact of pregnancy on one's life. Lastly, item 14, "Pregnancy practices differ from country to county," assessed participants' awareness of cultural beliefs and expectations.

Surveys I and II also included the questions "The best age to be sexually active is" and "The best age to have children is." Participants selected from the answers: 13 or younger, 14-16, 17-19, 20-22, 23-25, or 26 or older.

Survey III consisted of four open-ended questions to obtain participants' thoughts on the Pregnancy Profile® Program and to further assess participants' personal readiness and ability to provide for a child. Questions included, "Please describe how the Pregnancy Profile® Program changed your views on pregnancy," "Based on what you now know, please explain why you feel you are or are not ready to have a child," and "Would you recommend the Pregnancy Profile® Program to other high school students? Please explain why or why not." Participants were also given the opportunity to share any additional comments.

*Data Collection Procedures*

Each high school selected to participate in the present study, selected a FACS or Health class consisting of at least 15 to 20 students to conduct one-week worth of the Pregnancy Profile® Program, including program curriculum and the use of a pregnancy simulator. Each

classroom received a Pregnancy Profile® 2-Pack, free of charge, to use during the course of the study as well as to keep as a thank you for their participation. The Pregnancy Profile® 2-Pack included two pregnancy simulators, two maternity t-shirts, two carrying cases, curriculum, and one "Timeline of Pregnancy" laminated diagram.

Instructors provided each student with a "consent packet," developed and assembled by the researcher, which included a parent/guardian letter, a parent/guardian permission form, and a student consent form. In accordance with Realityworks, Inc. and IRB requirements, the parent/guardian letter provided detailed information about the Pregnancy Profile® Program, pregnancy simulator safety precautions, and the present study while the consent forms provided similar information and requested consent to participate. Only students who provided consent and received parent/guardian permission were allowed to participate in the study. For nonparticipating students, a substitute assignment, unassociated with the present study and researcher, was assigned by the instructor.

Using five-digit numbers provided by the researcher, instructors assigned each participant to a unique ID number. Instructors documented participant names and corresponding ID numbers then securely stored this information in a safe location during the course of the study. ID numbers were used as a means of identification instead of student names, thus allowing the researcher to make pre- and post-survey comparisons while keeping student identification anonymous.

Instructors administered Survey I on the Friday before beginning Pregnancy Profile® Program instruction. In doing so, instructors provided each participant with his or her assigned ID number and ensured that all ID numbers were written in the space provided located on the

survey. In addition, all participants received a sealable envelope in which upon survey completion placed their survey inside, sealed, and then handed back to the instructor.

Monday began the start of the one-week worth of Pregnancy Profile® Program instruction. Instructors completed the required lessons and activities as outlined by the researcher within their regularly scheduled class period. Instruction was selected by the researcher due to the limited length of time and to ensure that all participants were exposed to the same sampling of the curriculum. To begin, instructors introduced the pregnancy simulator, providing a demonstration, directions for use, and safety information. In the days to follow, participants examined personal life goals and expectations, the physical and emotional changes during pregnancy, stages of fetal development, prenatal care, myths of pregnancy, cultural beliefs and expectations, father roles, costs of pregnancy and rising a child, personal readiness and ability to provide for a child, and the impact of pregnancy on one's life through the use of various classroom activities, transparencies, and associated worksheets. Instructors received the appropriate number of copies of all classroom materials required.

Throughout the week of instruction, each participant was required to wear one of the two pregnancy simulators for a period of 20-minutes. While wearing the pregnancy simulators, participants completed small everyday tasks such as tying his or her shoes, walking up and down a flight of stairs, and/or sitting down and standing up several times. Due to limited classroom time, students may have worn the pregnancy simulators while completing other required classroom instruction and/or activities.

On the final day of instruction, Friday, instructors administered Surveys II and III. In doing so, instructors once again provided each participant with his or her assigned ID number and ensured that all ID numbers were written in the space provided located on the surveys. In

addition, all participants received a sealable envelope in which upon survey completion placed both surveys inside, sealed, and then handed back to the instructor.

Upon completion of the week worth of Pregnancy Profile® Program instruction, all student ID documentation was destroyed, thus the identity of the participants remained unknown to the researcher. Lastly, all signed consent forms and sealed envelopes containing the completed surveys were shipped to the researcher. Upon receipt, all signed consent forms were kept in a safe location, separate from any other study documentation, and completed surveys began the data analysis process.

*Data Analysis*

SPSS version 11.5 was used to analyze the quantitative data. Descriptive statistics, frequencies, and paired *t* tests were performed to compare the pre-intervention assessment to the post-intervention assessment. Qualitative data was reviewed, coded, and categorized into themes by the researcher. Upon completion, number of responses per theme and corresponding percentages were calculated.

*Limitations*

There were several limitations to the present study. Teaching styles and furthermore, knowledge of the topic among the instructors may have varied, creating differences among the participants' post-intervention knowledge and attitudes. Similarly, the instructors' lack of familiarity with the Pregnancy Profile® Program, including the required lessons and activities, most likely created an environment not representative of typical classroom instruction. In addition, program materials were limited to one-week and although the researcher selected a representative sampling of the curriculum, the program was not tested in its entirety. Lastly, the use of students enrolled in FACS courses most likely were not representative of the typical high

school population such that most FACS courses are elective, often selected by students with particular interest in topics such as parenting.

# Results

The purpose of the present study was to determine effectiveness of the Pregnancy Profile® Program, a component of Realityworks' RealCare® Parenting Program, and furthermore, to determine whether the Pregnancy Profile® Program significantly affects high school students' knowledge, attitudes, and beliefs about pregnancy and its many life-changing consequences. As a result, 95 participants received one-week worth of instruction including researcher-selected lessons and activities and use of the Pregnancy Profile® Vest, or pregnancy simulator. The quantitative pre-intervention assessment was administered before the start of instruction while quantitative and qualitative post-intervention assessments were administered upon completion of the one-week worth of instruction.

Determining effectiveness of the program will allow Realityworks' customers and prospects to make the appropriate decisions when making plans to purchase the program and furthermore, implement the Pregnancy Profile® Program into their classroom. The sections below address quantitative results, including demographics, participants' pre- and post-intervention knowledge of pregnancy, and participants' pre- and post- intervention attitudes/opinions of pregnancy, and qualitative results.

## *Demographics*

More than half (55.8 percent, $n = 53$) of the participants lived with both parents, natural or adoptive, while 14 (14.7 percent) lived with their mother and step-father, 12 (12.6 percent) with their mother only, seven (7.4 percent) with their father and step-mother, three (3.2 percent) with their father only, and six (6.3 percent) selected "other." Of the participants living with a father-figure, 30.5 percent ($n = 29$) of fathers had earned a high school diploma or GED, 14.7 percent ($n = 14$) a bachelors degree, 12.6 percent ($n = 12$) a masters degree or higher, and 10.5

percent ($n$ = 10) an associates degree. Nineteen (20.0 percent) participants were unaware of their father-figure's highest level of education. Of the participants living with a mother-figure, 33.7 percent ($n$ = 32) of mothers had earned a high school diploma or GED, 16.8 percent ($n$ = 16) a masters degree or higher, 13.7 percent ($n$ = 13) a bachelors degree, and 9.5 percent ($n$ = 9) an associates degree. Twenty-one (22.1 percent) participants were unaware of their mother-figure's highest level of education.

With exception of three (3.2 percent) participants whom were only children, birth order was fairly equal among participants with 33 (34.7 percent) being the middle child, 32 (33.7 percent) being the oldest child, and 27 (28.4 percent) being the youngest child. In particular, 40.0 percent ($n$ = 38) of participants reported having two siblings, 24.2 percent ($n$ = 23) one sibling, 12.6 percent ($n$ = 12.6) more than five siblings, 10.5 percent ($n$ = 10) three siblings, 6.3 percent ($n$ = 6.3) four siblings, 3.2 percent ($n$ = 3) five siblings, and another 3.2 percent ($n$ = 3) no siblings. Lastly, of the 95 participants, only two (2.1 percent) reported having children and one (1.1 percent) reported having worn a pregnancy simulator in the past.

*Knowledge of Pregnancy*

*Which is NOT a symptom or discomfort of pregnancy?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 77.9 percent ($n$ = 74) of participants selecting the correct answer of "Diarrhea," 14.7 percent ($n$ = 14) selecting "I do not know," 5.3 percent ($n$ = 5) selecting "Swelling of hands and feet," and 1.1 percent ($n$ = 1) selecting "Nausea" on the pre-intervention assessment compared to 85.3 percent ($n$ = 81) of participants selecting the correct answer of "Diarrhea," 6.3 percent ($n$ = 6) selecting "I do not know," 3.2 percent ($n$ = 3) selecting "Swelling of hands and feet," 2.1 percent ($n$ = 2) selecting "Nausea," and 1.1 percent ($n$ = 1) selecting "Increased tiredness" on the post-intervention

assessment, $t(91) = 2.238$, $p = .028$. Although the majority of participants selected the correct answer on the pre-intervention assessment, a slight increase in the recognition of pregnancy symptoms and discomforts occurred on the post-intervention assessment (from 77.9 percent, $n =$ 74 to 85.3 percent, $n = 81$) thus supporting the program's direct outcome of increasing participants' knowledge of the physical changes that occur with pregnancy.

*During what trimester does a baby gain the most weight?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 35.8 percent ($n = 34$) of participants selecting the correct answer of "Third," 28.4 percent ($n = 27$) selecting "I do not know," 26.3 percent ($n = 25$) selecting "Second," and 8.4 percent ($n = 8$) selecting "First" on the pre-intervention assessment compared to 55.8 percent ($n = 53$) of participants selecting the correct answer of "Third," 26.3 percent ($n = 25$) selecting "Second," 14.7 percent ($n = 14$) selecting "First," and 3.2 percent ($n = 3$) selecting "I do not know" on the post-intervention assessment, $t(93) = 3.457$, $p = .001$. A moderate increase in the recognition of fetal weight gain occurred from pre- to post-intervention assessment (from 35.8 percent, $n = 34$ to 55.8 percent, $n = 53$) thus supporting the program's direct outcome of increasing participants' knowledge of fetal development.

*During what trimester do a baby's fingernails and fingerprints appear?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 35.8 percent ($n = 34$) of participants selecting the correct answer of "Second," 35.8 percent ($n = 34$) selecting "I do not know," 17.9 percent ($n = 17$) selecting "Third," and 9.5 percent ($n = 9$) selecting "First" on the pre-intervention assessment compared to 48.4 percent ($n = 46$) of participants selecting the correct answer of "Second," 23.2 percent ($n = 22$) selecting "First," 18.9 percent ($n = 18$) selecting "Third," and 9.5 percent ($n = 9$) selecting "I do not know" on the

post-intervention assessment, $t(93) = 5.050$, $p = .000$. A moderate increase in the recognition of fetal fingernail and fingerprint development occurred from pre- to post-intervention assessment (from 35.8 percent, $n = 34$ to 48.4 percent, $n = 46$) thus supporting the program's direct outcome of increasing participants' knowledge of fetal development.

*During what trimester do a baby's major organs and systems form?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 29.5 percent ($n = 28$) of participants selecting "I do not know," 27.4 percent ($n = 26$) selecting the correct answer of "First," 23.2 percent ($n = 22$) selecting "Second," and 18.9 percent ($n = 18$) selecting "Third" on the pre-intervention assessment compared to 65.3 percent ($n = 62$) of participants selecting the correct answer of "First," 21.1 percent ($n = 20$) selecting "Second," 8.4 percent ($n = 8$) selecting "Third," and 4.2 percent ($n = 4$) selecting "I do not know" on the post-intervention assessment, $t(92) = 7.932$, $p$ .000. In most cases, participants changed an incorrect answer to the correct answer from pre- to post-intervention assessment (from 27.4 percent, $n = 26$ to 65.3 percent, $n = 62$) indicating a considerable increase in the recognition of fetal organ and system development thus supporting the program's direct outcome of increasing participants' knowledge of fetal development .

*How many brain cells does a baby have at birth?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 70.5 percent ($n = 67$) of participants selecting "I do not know," 12.6 percent ($n = 12$) selecting "100 million," 10.5 percent ($n = 10$) selecting "100 thousand," and 5.3 percent ($n = 5$) selecting the correct answer of "100 billion" on the pre-intervention assessment compared to 57.9 percent ($n = 55$) of participants selecting the correct answer of "100 billion," 17.9 percent ($n = 17$) selecting "100 million," 16.8 percent ($n = 16$) selecting "I do not know," and 6.3 percent ($n = 6$) selecting "100

thousand" on the post-intervention assessment, $t(92) = 4.155$, $p = .000$. In most cases, participants changed an incorrect answer to the correct answer from pre- to post-intervention assessment (from 5.3 percent, $n = 5$ to 57.9 percent, $n = 55$) indicating a considerable increase in the recognition of fetal brain development thus supporting the program's direct outcome of increasing participants' knowledge of fetal development.

*Which of the following is a TRUTH about pregnancy?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 50.5 percent ($n = 48$) of participants selecting "I do not know," 18.9 percent ($n = 18$) selecting the correct answer of "Pregnancy causes a mother's hair to become thick and healthy," 15.8 percent ($n = 15$) selecting "It is dangerous to engage in sexual intercourse while pregnant," 12.6 percent ($n = 12$) selecting "If the baby's heart rate is low, it is a boy," and 1.1 percent ($n = 1$) selecting "If a mother drinks too much coffee, her baby will be born with light brown birthmarks, known as café au lait spots" on the pre-intervention assessment compared to 74.7 percent ($n = 71$) of participants selecting the correct answer of "Pregnancy causes a mother's hair to become thick and healthy," 15.8 percent ($n = 15$) selecting "I do not know," 4.2 percent ($n = 4$) selecting "It is dangerous to engage in sexual intercourse while pregnant," 2.1 percent ($n = 2$) selecting "If a mother drinks too much coffee, her baby will be born with light brown birthmarks, known as café au lait spots," and 1.1 percent ($n = 1$) selecting "If the baby's heart rate is low, it is a boy" on the post-intervention assessment, $t(91) = 3.795$, $p = .000$. In most cases, participants changed an incorrect answer to the correct answer from pre- to post-intervention assessment (from 18.9 percent, $n = 18$ to 74.7 percent, $n = 71$) indicating a considerable increase in the recognition of the truths of pregnancy thus supporting the program's direct outcome of increasing participants' awareness of misinformation and myths of pregnancy.

*A medical doctor who specializes in the care of pregnant women and delivering babies is called:* Item significantly differed from pre-intervention assessment to post-intervention assessment with 34.7 percent ($n$ = 33) of participants selecting the correct answer of "Both an OB-GYN and an obstetrician," 26.3 percent ($n$ = 25) selecting "OB-GYN," 25.3 percent ($n$ = 24) selecting "I do not know," 11.6 percent ($n$ = 11) selecting "Obstetrician," and 2.1 percent ($n$ = 2) selecting "Podiatrist" on the pre-intervention assessment compared to 38.9 percent ($n$ = 37) of participants selecting "OB-GYN," 32.6 percent ($n$ = 31) selecting the correct answer of "Both an OB-GYN and an obstetrician," 14.7 percent ($n$ = 14) selecting "Obstetrician," 9.5 percent ($n$ = 9) selecting "I do not know," and 3.2 percent ($n$ = 3) selecting "Podiatrist" on the post-intervention assessment, $t(93) = 3.375$, $p = .001$. Although item significantly differed from pre- to post-intervention assessment, a slight decrease in the recognition of medical doctor specialization occurred (from 34.7 percent, $n$ = 33 to 32.6 percent, $n$ = 31) thus not supporting the program's direct outcome of increasing participants' knowledge of good prenatal care.

*During the first seven months of pregnancy, an expectant mother visits her doctor how often?* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 47.4 percent ($n$ = 45) of participants selecting the correct answer of "Once a month," 22.1 percent ($n$ = 21) selecting "I do not know," 20.0 percent ($n$ = 19) selecting "Every two weeks," 6.3 percent ($n$ = 6) selecting "Every week," and 4.2 percent ($n$ = 4) selecting "Every two months" on the pre-intervention assessment compared with 55.8 percent ($n$ = 53) of participants selecting the correct answer of "Once a month," 22.1 percent ($n$ = 21) selecting "Every two weeks," 7.4 percent ($n$ = 7) selecting "Every week," 7.4 percent ($n$ = 7) selecting "I do not know," and 5.3 percent ($n$ = 5) selecting "Every two months" on the post intervention assessment, $t(92) = 1.675$, $p = .097$. Although item did not significantly differ from pre- to post-

intervention assessment, a slight increase in the recognition of medical visits occurred (from 47.4 percent, $n = 45$ to 55.8 percent, $n = 53$) thus supporting the program's direct outcome of increasing participants' knowledge of good prenatal care.

*Which of the following CAN NOT be determined by an ultrasound?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 35.8 percent ($n = 34$) of participants selecting the correct answer of "Genetic and chromosomal disorders," 22.1 percent ($n = 21$) selecting "Defects in a baby's fetal organs," 21.1 percent ($n = 20$) selecting "I do not know," 16.8 percent ($n = 16$) selecting "A baby's due date," and 4.2 percent ($n = 4$) selecting "Position of baby before delivery" on the pre-intervention assessment compared to 54.7 percent ($n = 52$) of participants selecting the correct answer of "Genetic and chromosomal disorders," 18.9 percent ($n = 18$) selecting "Defects in a baby's fetal organs," 16.8 percent ($n = 16$) selecting "A baby's due date," 8.4 percent ($n = 8$) selecting "I do not know," and 1.1 percent ($n = 1$) selecting "Position of baby before delivery" on the post-intervention assessment, $t(94) = 3.344$, $p = .001$. A moderate increase in the recognition of ultrasound knowledge occurred from pre- to post-intervention assessment (from 35.8 percent, $n = 34$ to 54.7 percent, $n = 52$) thus supporting the program's direct outcome of increasing participants' knowledge of good prenatal care.

*Which of the following is FALSE about amniocenteses?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 76.8 percent ($n = 73$) of participants selecting "I do not know," 8.4 percent ($n = 8$) selecting "Amniocenteses carry a very slight risk of infection that could lead to a miscarriage," 6.3 percent ($n = 6$) selected the correct answer of "Amniocenteses are completed after the fifteenth and eighteenth week of pregnancy," 4.2 percent ($n = 4$) selected "Amniocenteses entail drawing fluid from the amniotic sac using a

fine needle," and 2.1 percent ($n$ = 2) selected "Mothers over the age of thirty-five are most likely to be tested" on the pre-intervention assessment compared to 44.2 percent ($n$ = 42) of participants selecting "I do not know," 26.3 percent ($n$ = 25) selecting the correct answer of "Amniocenteses are completed after the fifteenth and eighteenth week of pregnancy," 12.6 percent ($n$ = 12) selected "Amniocenteses carry a very slight risk of infection that could lead to a miscarriage," 8.4 percent ($n$ = 8) selected "Mothers over the age of thirty-five are most likely to be tested," and 7.4 percent ($n$ = 7) selected "Amniocenteses entail drawing fluid from the amniotic sac using a fine needle" on the post-intervention assessment, $t(91) = 6.678$, $p = .000$. A moderate increase in the recognition of amniocenteses knowledge occurred from pre- to post-intervention assessment (from 8.4 percent, $n$ = 8 to 26.3 percent, $n$ = 25) thus supporting the program's direct outcome of increasing participants' knowledge of good prenatal care.

*Pregnant women must immediately report:* Item significantly differed from pre-intervention assessment to post-intervention assessment with 38.9 percent ($n$ = 37) of participants selecting "I do not know," 37.9 percent ($n$ = 36) selecting "Braxton-Hicks contractions," 8.4 percent ($n$ = 8) selecting the correct answer of "Sudden weight gain," 8.4 percent ($n$ = 8) selecting "Lower back pain," and 6.3 percent ($n$ = 6) selecting "Varicose veins" on the pre-intervention assessment compared to 31.6 percent ($n$ = 30) of participants selecting "Braxton-Hicks contractions," 27.4 percent ($n$ = 26) selecting the correct answer of "Sudden weight gain," 18.9 percent ($n$ = 18) selecting "I do not know," 11.6 percent ($n$ = 11) selecting "Varicose veins," and 10.5 percent ($n$ = 10) selecting "Lower back pain" on the post-intervention assessment, $t(94) = 3.454$, $p = .001$. A moderate increase in the recognition of potential pregnancy difficulties occurred from pre- to post-intervention assessment (from 8.4 percent, $n$ =

8 to 27.4 percent, $n = 26$) thus supporting the program's direct outcome of increasing participants' knowledge of good prenatal care.

*Approximately how much does it cost for a middle-income family to raise one child 18 years?* Item significantly differed from pre-intervention assessment to post-intervention assessment with 43.2 percent ($n = 41$) of participants selecting "I do not know," 27.4 percent ($n = 26$) selecting "$201,250," 14.7 percent ($n = 14$) selecting the correct answer of "$178,590," 12.6 percent ($n = 12$) selecting "$105,890," and 2.1 percent ($n = 2$) selecting "$98,450" on the pre-intervention assessment compared to 63.2 percent ($n = 60$) of participants selecting the correct answer of "$178,590," 18.9 percent ($n = 18$) selecting "$201,250," 8.4 percent ($n = 8$) selecting "$105,890," 7.4 percent ($n = 7$) selecting "I do not know," and 2.1 percent ($n = 2$) selecting "$98,450" on the post-intervention assessment, $t(94) = 5.980$, $p = .000$. A considerable increase in the recognition of financial obligations occurred from pre- to post-intervention assessment (from 14.7 percent, $n = 14$ to 63.2 percent, $n = 60$) thus supporting the program's direct outcome of increasing participants' knowledge of the costs of raising a child.

*Attitudes/Opinions of Pregnancy*

*I am ready to have a baby.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 37.9 percent ($n = 36$) of participants selecting "Strongly disagree," 36.8 percent ($n = 35$) selecting "Disagree," 18.9 percent ($n = 18$) selecting "Neutral," 4.2 percent ($n = 4$) selecting "Agree," and 1.1 percent ($n = 1$) selecting "Strongly agree" on the pre-intervention assessment compared to 48.4 percent ($n = 46$) of participants selecting "Strongly disagree," 26.3 percent ($n = 25$) selecting "Disagree," 17.9 percent ($n = 17$) selecting "Neutral," 4.2 percent ($n = 4$) selecting "Agree," and 2.1 percent ($n = 2$) selecting "Strongly agree" on the post-intervention assessment, $t(92) = 1.157$, $p = .250$. The item's lack of

significance between the pre- ($M$ = 1.90) and post-intervention assessment ($M$ = 1.82) does not support the program's direct outcome of increasing participants' awareness of personal readiness and ability to provide for a child.

*I would be upset if I found out I (or my girlfriend) became pregnant.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 31.6 percent ($n$ = 30) of participants selecting "Strongly agree," 28.4 percent ($n$ = 27) selecting "Agree," 17.9 percent ($n$ = 17) selecting "Neutral," 12.6 percent ($n$ = 12) selecting "Disagree," and 8.4 percent ($n$ = 8) selecting "Strongly disagree" on the pre-intervention assessment compared to 30.5 percent ($n$ = 29) of participants selecting "Strongly agree," 30.5 percent ($n$ = 29) selecting "Neutral," 23.2 percent ($n$ = 22) selecting "Agree," 8.4 percent ($n$ = 8) selecting "Disagree," and 7.4 percent ($n$ = 7) selecting "Strongly disagree" on the post-intervention assessment, $t(93) = .088$, $p = .930$. The item's lack of significance between the pre- ($M$ = 3.63) and post-intervention assessment ($M$ = 3.62) does not support the program's direct outcome of increasing participants' awareness of personal readiness and ability to provide for a child.

*An infant needs a safe, secure environment filled with loving care.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 93.7 percent ($n$ = 89) of participants selecting "Strongly agree," 5.3 percent ($n$ = 5) selecting "Agree," and 1.1 percent ($n$ = 1) selecting "Neutral" on the pre-intervention assessment compared to 91.6 percent ($n$ = 87) of participants selecting "Strongly agree," 7.4 percent ($n$ = 7) selecting "Agree," and 1.1 percent ($n$ = 1) selecting "Neutral" on the post-intervention assessment, $t(94) = .630$, $p = .530$. The item's lack of significance between the pre- ($M$ = 4.93) and post-intervention assessment ($M$ = 4.91) does not support the program's direct outcome of increasing participants' awareness of personal readiness and ability to provide for a child.

*I could afford to raise a baby.* Item significantly differed from pre-intervention assessment to post-intervention assessment with 38.9 percent ($n$ = 37) of participants selecting "Disagree," 32.6 percent ($n$ = 31) selecting "Strongly disagree," 20.0 percent ($n$ = 19) selecting "Neutral," 6.3 percent ($n$ = 6) selecting "Agree," and 1.1 percent ($n$ = 1) selecting "Strongly agree" on the pre-intervention assessment compared to 45.3 percent ($n$ = 43) of participants selecting "Strongly disagree," 35.8 percent ($n$ = 34) selecting "Disagree," 10.5 percent ($n$ = 10) selecting "Neutral," 6.3 percent ($n$ = 6) selecting "Agree," and 2.1 percent ($n$ = 2) selecting "Strongly agree" on the post-intervention assessment, $t(93) = 2.349$, $p = .021$. The item's significance between the pre- ($M$ = 2.03) and post-intervention assessment ($M$ = 1.82) supports the program's direct outcomes of increasing participants' awareness of personal readiness and ability to provide for a child as well as increasing participants' knowledge of the costs of pregnancy and raising a child.

*My future plans would be altered if I (or my girlfriend) became pregnant.* Item significantly differed from pre-intervention assessment to post-intervention assessment with 37.9 percent ($n$ = 36) of participants selecting "Strongly agree," 36.8 percent ($n$ = 35) selecting "Agree," 12.6 percent ($n$ = 12) selecting "Neutral," 7.4 percent ($n$ = 7) selecting "Disagree," and 4.2 percent ($n$ = 4) selecting "Strongly disagree" on the pre-intervention assessment compared to 54.7 percent ($n$ = 52) of participants selecting "Strongly agree," 24.2 percent ($n$ = 23) selecting "Agree," 13.7 percent ($n$ = 13) selecting "Neutral," 4.2 percent ($n$ = 4) selecting "Strongly disagree," and 3.2 percent ($n$ = 3) selecting "Disagree" on the post-intervention assessment, $t(93) = -2.188$, $p = .031$. The item's significance between the pre- ($M$ = 3.98) and post-intervention assessment ($M$ = 4.22) supports the program's direct outcomes of increasing participants'

awareness of personal life goals and expectations as well as increasing participants' knowledge of the impact of pregnancy on one's life.

*My personal values would be violated if I (of my girlfriend) became pregnant.* Item significantly differed from pre-intervention assessment to post-intervention assessment with 27.4 percent ($n$ = 26) of participants selecting "Agree," 25.3 percent ($n$ = 24) selecting "Neutral," 20.0 percent ($n$ = 19) selecting "Disagree," 18.9 percent ($n$ = 18) selecting "Strongly agree," and 7.4 percent ($n$ = 7) selecting "Strongly disagree" on the pre-intervention assessment compared to 37.9 percent ($n$ = 36) of participants selecting "Agree," 24.2 percent ($n$ = 23) selecting "Strongly agree," 22.1 percent ($n$ = 21) selecting "Neutral," 9.5 percent ($n$ = 9) selecting "Disagree," and 6.3 percent ($n$ = 6) selecting "Strongly disagree" on the post-intervention assessment, $t(93) = -3.135$, $p = .002$. The item's significance between the pre- ($M = 3.31$) and post-intervention assessment ($M = 3.65$) supports the program's direct outcomes of increasing participants' awareness of personal life goals and expectations as well as increasing participants' knowledge of the impact of pregnancy on one's life.

*Parent needs are more important than children needs.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 46.3 percent ($n$ = 44) of participants selecting "Strongly disagree," 43.2 percent ($n$ = 41) selecting "Disagree," 9.5 percent ($n$ = 9) selecting "Neutral," and 1.1 percent ($n$ = 1) selecting "Strongly Agree" on the pre-intervention assessment compared to 49.5 percent ($n$ = 47) of participants selecting "Strongly disagree," 35.8 percent ($n$ = 34) selecting "Disagree," 7.4 percent ($n$ = 7) selecting "Neutral," 4.2 percent ($n$ = 4) selecting "Agree," and 3.2 percent ($n$ = 3) selecting "Strongly agree" on the post-intervention assessment, $t(94) = -1.101$, $p = .274$. The item's lack of significance between the pre- ($M = 1.66$) and post-intervention assessment ($M = 1.76$) does not support the program's

direct outcomes of increasing participants' awareness of personal readiness and ability to provide for a child as well as increasing participants' knowledge of the impact of pregnancy on one's life.

*A parent must make daily sacrifices in order to financially support their children.* Item significantly differed from pre-intervention assessment to post-intervention assessment with 48.4 percent ($n$ = 46) of participants selecting "Agree," 37.9 percent ($n$ = 36) selecting "Strongly agree," 10.5 percent ($n$ = 10) selecting "Neutral," and 3.2 percent ($n$ = 3) selecting "Disagree" on the pre-intervention assessment compared to 51.6 percent ($n$ = 49) of participants selecting "Strongly agree," 38.9 percent ($n$ = 37) selecting "Agree," 6.3 percent ($n$ = 6) selecting "Neutral," and 3.2 percent ($n$ = 3) selecting "Disagree" on the post-intervention assessment, $t(94) = -2.221$, $p = .029$. The item's significance between the pre- ($M = 4.21$) and post-intervention assessment ($M = 4.39$) supports the program's direct outcomes of increasing participants' knowledge of the costs of pregnancy and raising a child as well as increasing participants' knowledge of the impact of pregnancy on one's life.

*It is important for the father to participate in the pregnancy.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 67.4 percent ($n$ = 64) of participants selecting "Strongly agree," 23.2 percent ($n$ = 22) selecting "Agree," and 9.5 percent ($n$ = 9) selecting "Neutral" on the pre-intervention assessment compared to 70.5 percent ($n$ = 67) of participants selecting "Strongly agree," 25.3 percent ($n$ = 24) selecting "Agree," and 4.2 percent ($n$ = 4) selecting "Neutral" on the post-intervention assessment, $t(94) = -1.339$, $p = .184$. The item's lack of significance between the pre- ($M = 4.58$) and post-intervention assessment ($M = 4.66$) does not support the program's direct outcome of increasing participants' awareness of the role of a positive father.

*It is important for the father to participate after the child is born.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 78.9 percent ($n$ = 75) of participants selecting "Strongly agree," 18.9 percent ($n$ = 18) selecting "Agree," and 2.1 percent ($n$ = 2) selecting "Neutral" on the pre-intervention assessment compared to 85.3 percent ($n$ = 81) of participants selecting "Strongly agree," 11.6 percent ($n$ = 11) selecting "Agree," and 3.2 percent ($n$ = 3) selecting "Neutral" on the post-intervention assessment, $t(94) = -1.043$, $p = .300$. The item's lack of significance between the pre- ($M = 4.77$) and post-intervention assessment ($M = 4.82$) does not support the program's direct outcome of increasing participants' awareness of the role of a positive father.

*Pregnancy can often cause stress on relationships with others.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 53.7 percent ($n$ = 51) of participants selecting "Agree," 32.6 percent ($n$ = 31) selecting "Strongly agree," 12.6 percent ($n$ = 12) selecting "Neutral," and 1.1 percent ($n$ = 1) selecting "Disagree" on the pre-intervention assessment compared to 52.6 percent ($n$ = 50) of participants selecting "Agree," 32.6 percent ($n$ = 31) selecting "Strongly agree," and 14.7 percent ($n$ = 14) selecting "Neutral" on the post-intervention assessment, $t(94) = .000$, $p = 1.000$. The item's lack of significance between the pre- ($M = 4.18$) and post-intervention assessment ($M = 4.18$) does not support the program's direct outcome of increasing participants' knowledge of the impact of pregnancy on one's life.

*A women's body goes through tremendous changes during pregnancy.* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 64.2 percent ($n$ = 61) of participants selecting "Strongly agree," 33.7 percent ($n$ = 32) selecting "Agree," and 2.1 percent ($n$ = 2) selecting "Neutral" on the pre-intervention assessment

compared to 56.8 percent ($n$ = 54) of participants selecting "Strongly agree," 36.8 percent ($n$ = 35) selecting "Agree," and 4.2 percent ($n$ = 4) selecting "Neutral" on the post-intervention assessment, $t(92) = 1.094$, $p = .277$. The item's lack of significance between the pre- ($M = 4.61$) and post-intervention assessment ($M = 4.54$) does not support the program's direct outcome of increasing participants' knowledge of the physical and emotional changes that occur with pregnancy.

*It is difficult to perform daily tasks when pregnant.* Item significantly differed from pre-intervention assessment to post-intervention assessment with 44.2 percent ($n$ = 42) of participants selecting "Agree," 25.3 percent ($n$ = 24) selecting "Strongly agree," 22.1 percent ($n$ = 21) selecting "Neutral," 7.4 percent ($n$ = 7) selecting "Disagree," and 1.1 percent ($n$ = 1) selecting "Strongly disagree" on the pre-intervention assessment compared to 49.5 percent ($n$ = 47) of participants selecting "Agree," 31.6 percent ($n$ = 30) selecting "Strongly agree," 12.6 percent ($n$ = 12) selecting "Neutral," and 3.2 percent ($n$ = 3) selecting "Disagree" on the post-intervention assessment, $t(91) = -3.376$, $p = .001$. The item's significance between the pre- ($M$ = 3.85) and post-intervention assessment ($M = 4.13$) supports the program's direct outcome of increasing participants' knowledge of the physical and emotional changes that occur with pregnancy as well as increasing participants' knowledge of the impact of pregnancy on one's life.

*Pregnancy practices differ from country to country.* Item significantly differed from pre-intervention assessment to post-intervention assessment with 48.4 percent ($n$ = 46) of participants selecting "Agree," 28.4 percent ($n$ = 27) selecting "Neutral," 17.9 percent ($n$ = 17) selecting "Strongly agree," 4.2 percent ($n$ = 4) selecting "Disagree," and 1.1 percent ($n$ = 1) selecting "Strongly disagree" on the pre-intervention assessment compared to 43.2 percent ($n$ =

41) of participants selecting "Strongly agree," 43.2 percent ($n$ = 41) selecting "Agree," and 10.5 percent ($n$ = 10) selecting "Neutral" on the post-intervention assessment, $t(91) = -5.909$, $p$ = .000. The item's significance between the pre- ($M$ = 3.77) and post-intervention assessment ($M$ = 4.34) supports the program's direct outcome of increasing participants' knowledge of cultural beliefs and expectations.

*The best age to be sexually active is:* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 37.9 percent ($n$ = 36) of participants selecting "20-22," 25.3 percent ($n$ = 24) selecting "17-19," 21.1 percent ($n$ = 20) selecting "23-25," 9.5 percent ($n$ = 9) selecting "26 or older," and 3.2 percent ($n$ = 3) selecting "14-16" on the pre-intervention assessment compared to 42.1 percent ($n$ = 40) of participants selecting "20-22," 28.4 percent ($n$ = 27) selecting "23-25," 14.7 percent ($n$ = 14) selecting "17-19," 5.3 percent ($n$ = 5) selecting "26 or older," and 2.1 percent ($n$ = 2) selecting "14-16" on the post-intervention assessment, $t(87) = -1.494$, $p$ = .139.

*The best age to have children is:* Item did not significantly differ from pre-intervention assessment to post-intervention assessment with 58.9 percent ($n$ = 56) of participants selecting "23-25," 23.2 percent ($n$ = 22) selecting "26 or older," 14.7 percent ($n$ = 14) selecting "20-22," and 1.1 percent ($n$ = 1) selecting "17-19" on the pre-intervention assessment compared to 55.8 percent ($n$ = 53) of participants selecting "23-35," 20.0 percent ($n$ = 19) selecting "26 or older," 15.8 percent ($n$ = 15) selecting "20-22," and 1.1 percent ($n$ = 1) selecting "17-19" on the post-intervention assessment, $t(87) = .623$, $p$ = .535.

*Qualitative Results*

*Please describe how the Pregnancy Profile® Program changed your views on pregnancy.* Participants most often mentioned pregnancy's physical changes (29.5 percent, $n$ = 28) and

restrictions (21.1 percent, $n = 20$). Seventeen (17.9 percent) participants described pregnancy as being difficult while three (3.2 percent) discussed pregnancy as being painful. Eleven (11.6 percent) participants discussed the financial obligations of having a child. Other responses included: increased respect (7.4 percent, $n = 7$) and empathy (3.2 percent, $n = 3$) for pregnant women, pregnancy's affect on future aspirations (6.3 percent, $n = 6$), and the realization of the level of responsibility (4.2 percent, $n = 4$) and time (2.1 percent, $n = 2$) of caring for a child. Fourteen (14.7 percent) participants stated that the program did not change their views on pregnancy while two (2.1 percent) mentioned uncertainty as to whether or not the program changed their views.

*Based on what you now know, please explain why you feel you ARE or ARE NOT ready to have a child.* The majority of participants (70.5 percent, $n = 67$) indicated not being ready to have a child. Reasons included: unemployment and/or lack of money (64.2 percent, $n = 61$), dedication to future aspirations (24.2 percent, $n = 23$), age and/or being too young (14.7 percent, $n = 14$), immaturity (9.5 percent, $n = 9$), desire to have fun (8.4 percent, $n = 8$), limited time to care for a child (6.3 percent, $n = 6$), emotionally unstable (5.3 percent, $n = 5$), inability to support a child (4.2 percent, $n = 4$), desire to marry before having a child (4.2 percent, $n = 4$), unfit (3.2 percent, $n = 3$), physically unfit (2.1 percent, $n = 2$), mentally unstable (2.1 percent, $n = 2$), fears of becoming a disappointment to parents (2.1 percent, $n = 2$), no patience (2.1 percent, $n = 2$), unstable environment (2.1 percent, $n = 2$), currently focusing on self (2.1 percent, $n = 2$), desire to live without worries (2.1 percent, $n = 2$), and uninterested in the commitment (2.1 percent, $n = 2$) and responsibility (2.1 percent, $n = 2$) of having a child. Eight (8.4 percent) participants indicated being ready to have a child while one (1.1 percent) mentioned uncertainty as to whether or not they were ready to have a child.

*Would you recommend the Pregnancy Profile® Program to other high school students? Please explain WHY or WHY NOT.* The majority of participants (88.4 percent, $n = 84$) would recommend the program to other high school students. Reasons included: ability to physically experience what it is like to be pregnant (35.8 percent, $n = 34$), informational (14.7 percent, $n = 14$), good experience (10.5 percent, $n = 10$), provokes participants to think about pregnancy and raising a child (9.5 percent, $n = 9$), ability to learn of the difficulties (4.2 percent, $n = 4$) and restrictions of pregnancy (2.1 percent, $n = 2$), fun experience (2.1 percent, $n = 2$), and ability to observe responses from peers (2.1 percent, $n = 2$). Five (5.3 percent) participants indicated that they would not recommend the program while two (2.1 percent) indicated they would only recommend the pregnancy simulator without the use of the curriculum.

# Discussion

The purpose of the present study was to determine effectiveness of the Pregnancy Profile® Program, a component of Realityworks' RealCare® Parenting Program, and furthermore, to determine whether the Pregnancy Profile® Program significantly affects high school students' knowledge, attitudes, and beliefs about pregnancy and its many life-changing consequences. Previous sections have described the present study in detail, while the sections below discuss the study's limitations as well as the researcher's conclusions and recommendations. Determining effectiveness of the program will allow Realityworks' customers and prospects to make the appropriate decisions when making plans to purchase the program and furthermore, implement the Pregnancy Profile® Program into their classroom.

## *Limitations*

There were several limitations to the present study. Teaching styles and furthermore, knowledge of the topic among the instructors may have varied, creating differences among the participants' post-intervention knowledge and attitudes. Similarly, the instructors' lack of familiarity with the Pregnancy Profile® Program, including the required lessons and activities, most likely created an environment not representative of typical classroom instruction. In addition, program materials were limited to one-week and although the researcher selected a representative sampling of the curriculum, the program was not tested in its entirety. Lastly, the use of students enrolled in FACS courses most likely were not representative of the typical high school population such that most FACS courses are elective, often selected by students with particular interest in topics such as parenting.

## *Conclusions*

Both the results of the data analysis and the participants' own evaluation confirm the effectiveness of the Pregnancy Profile® Program, a device-based intervention comprised of a pregnancy simulator and corresponding curriculum. The program appears to be successful in positively affecting high school students' knowledge, attitudes, and beliefs about pregnancy and its many life-changing consequences. Participants increased their knowledge of cultural beliefs and expectations, the costs of pregnancy and raising a child, the physical and emotional changes that occur with pregnancy, fetal development and good prenatal care, and the impact of pregnancy on one's life, as well as increased their awareness of personal life goals and expectations and misinformation and myths of pregnancy. In addition, supporting the program's effectiveness, participants' overwhelming recommended the Pregnancy Profile® Program to other high school students for reasons such as the program's ability to allow students to physically experience the realities of pregnancy and learn of pregnancy's difficulties and restrictions.

Moreover, participants' qualitative responses clearly revealed the program's ability to convey pregnancy's physical changes and restrictions as well as the financial obligations of having a child and pregnancy's ability to affect future aspirations. As a result, upon completion of the program, the overwhelming majority of participants stated they were not ready to have a child for reasons including: inability to support a child physically, emotionally, mentally, and financially; dedication to future aspirations; age and/or being too young thus immature, lack of patience, and desire to have fun; limited time to care for a child; desire to marry before having a child; fears of becoming a disappointment to parents; desire to live without worries; and uninterested in the commitment and responsibility of having a child. Qualitative results also revealed the program's ability to increase participants' respect and empathy for pregnant women.

It should be noted, however, that quantitative results revealed the program's inability to increase participants' awareness of the role of a positive father in a healthy pregnancy, in which neither of the two relevant items achieved significance. An examination of the participants' responses provides clarification such that the overwhelming majority of participants strongly agreed or agreed to the items, "It is important for the father to participate in the pregnancy" and "It is important for the father to participate after the child is born," on the pre-intervention assessment thus leaving less of an opportunity to increase mean scores on the post-intervention assessment.

Likewise, quantitative results also revealed the program's somewhat inability to increase participants' awareness of personal readiness and ability to provide for a child, in which only one of the five relevant items achieved significance. Again, examination of participants' responses revealed that the majority of participants strongly agreed or agreed to the items, "I would be upset if I found out I (or my girlfriend) became pregnant," and "An infant needs a safe, secure environment filled with loving care," and strongly disagreed or disagreed to the items, "I am ready to have a baby" and "Parent needs are more important than children needs," on the post-intervention assessment thus leaving less of an opportunity to increase or decrease mean scores on the post-intervention assessment. However, contrary to quantitative results, participants' qualitative post-intervention assessment responses clearly demonstrated their awareness of lack of readiness and inability to provide for a child although most likely representative of pre-intervention attitudes/opinions based on quantitative responses.

In conclusion, prevention programs can be an important component in addressing the problem of adolescent pregnancy in which many models exist (Klein & Committee on Adolescence, 2005; Kirby, 2001). The Pregnancy Profile® Program, comprising of a pregnancy

simulator and corresponding curriculum, appears to be an effective program, positively affecting high school students' knowledge, attitudes, and beliefs about pregnancy and its many life-changing consequences. As a result, the researcher recommends the implementation of the program, allowing adolescents the opportunity to personally experience the physical symptoms of pregnancy, examine a variety of other aspects of pregnancy, assess personal readiness and ability to provide for a child, and analyze the impact of pregnancy on one's life.

*Recommendations*

It would be ideal to assess the longevity of the program's direct outcomes as well as the program's desired end-results by conducting a follow-up study over the subsequent three years. In addition, the researcher recommends future researchers to conduct additional effectiveness studies addressing the present study's limitations. For instance, it is recommended to evaluate the Pregnancy Profile® Program in its entirety then compare to the present study to determine whether differences exist with the use of the program as a whole. Furthermore, the evaluation of the Pregnancy Profile® Program in comparison to other pregnancy prevention interventions and/or lack of intervention as well as the use of middle school students in comparison to high school students is recommend to assess differences in students' knowledge, attitudes, and beliefs of pregnancy. All in all, although the present study provides evidence of the program's effectiveness, providing a sufficient amount of effectiveness research will allow Realityworks' customers and prospects to purchase the program and furthermore, implement the Pregnancy Profile® Program into their classroom.

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# Appendix: Pregnancy Profile® Program Logic Model

| INPUTS | ACTIVITIES | PARTICIPANTS | SHORT TERM OUTCOMES | LONG TERM OUTCOMES |
|---|---|---|---|---|
| *Resources and materials needed to produce a result:* | *Pregnancy Profile® Program activities:* | *Pregnancy Profile® Program participants:* | *Direct outcomes of the Pregnancy Profile® Program:* | *Desired end-results of the Pregnancy Profile® Program:* |
| Money, $599.00 for Pregnancy Profile® 1-Pack<br><br>Pregnancy Profile® Vest, including rib constrictor, water bladder, and weight bag<br><br>Pregnancy Profile® Program curriculum, including 10 lesson plans with classroom activities, transparencies, and associated worksheets<br><br>One-size-fits-all embroidered t-shirt<br><br>Carrying/storage case<br><br>Time, approximately 22-33 class periods | Identify personal life goals and expectations.<br><br>Describe the physical and emotional changes that occur during pregnancy.<br><br>Perform physical activities while wearing Pregnancy Profile® Vest.<br><br>Discuss physical and emotional observations while wearing Pregnancy Profile® Vest.<br><br>Identify the stages of fetal development.<br><br>Analyze healthy and unhealthy habits and their effect on the unborn child.<br><br>Identify the medical aspects of good prenatal care.<br><br>Analyze the myths of pregnancy.<br><br>Compare and contrast cultural beliefs and expectations of pregnancy.<br><br>Analyze the importance of a positive father role in a healthy pregnancy.<br><br>Determine the costs of pregnancy and raising a child.<br><br>Assess personal readiness and ability to provide for a child.<br><br>Analyze the impact of pregnancy on one's life. | Instructor<br><br>Students, grades 5-11 | To increase participants' awareness of personal life goals and expectations.<br><br>To increase participants' knowledge of the physical and emotional changes that occur during pregnancy.<br><br>To increase participants' knowledge of fetal development and good prenatal care.<br><br>To increase participants' awareness of misinformation and myths of pregnancy.<br><br>To increase participants' knowledge of cultural beliefs and expectations of pregnancy.<br><br>To increase participants' awareness of the role of a positive father in a healthy pregnancy.<br><br>To increase participants' knowledge of the costs of pregnancy and raising a child.<br><br>To increase participants' awareness of personal readiness and ability to provide for a child.<br><br>To increase participants' knowledge of the impact of pregnancy on one's life. | To increase the number of informed and mature young parents.<br><br>To increase the number of healthy infants born to young parents.<br><br>To increase use of contraceptives among sexually active adolescents.<br><br>To reduce the rates of sexual activity among adolescents. |