The relationship between female adolescent self-esteem, decision making, and contraceptive behavior

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Abstract

Purpose: To examine the relationship between female adolescent self-esteem, decision making, and contraceptive behavior in multiethnic, 14- to 17-year-olds, residing on the Big Island of Hawaii.

Data sources: This was a descriptive cross-sectional survey design using a convenience sample of 98 female adolescents aged 14-17 who came to five different clinics on the Big Island of Hawaii for health care. Along with a brief demographic questionnaire, global self-esteem was measured by Rosenberg's Self-Esteem Scale, decision making was measured by the Flinders Adolescent Decision Making Questionnaire, and sexual activity and contraception use was measured by a nonnormed Sexual History and Contraceptive Use Questionnaire developed for this study. Descriptive statistics, logistic regression, and correlations were used to analyze associations and correlations between age, global self-esteem, decision self-esteem, decision coping (vigilant and maladaptive), and contraceptive use for sexually active female adolescents.

Conclusions: No significant associations or correlations were found between age, global self-esteem, decision self-esteem, decision coping (vigilance), and the decision to use contraception in sexually active adolescent females. There was, however, significant negative correlation ($p < .05$) between overall maladaptive decision making and contraceptive use in sexually active female adolescents. This suggests that sexually active adolescent females with higher maladaptive scores are less likely to use contraception. There was also significant association ($p < .05$) between maladaptive decision making in contraceptive use and sexually active female adolescents. For every one unit increase on the maladaptive scale, the odds of using contraception were estimated to decrease by 7%.

Implications for practice: Adolescence is a period of transition that involves biological, cognitive, psychological, and social changes. During the vulnerable transition period of adolescence, decisions relating to contraception may occur. Interventions focused on improving decision-making skills and stimulating thinking around not only sexual issues but also on relationship and communication in adolescent issues may facilitate more competent decision making. Understanding the relationship between female adolescent self-esteem, decision making, and contraceptive behavior has contributed to the knowledge base about female contraceptive behavior. Gaining further insight into these relationships will help healthcare professionals provide counseling and health care to female adolescents.
Introduction

The teen pregnancy rate in the United States is one of the highest in the Western world (Dangal, 2006). An estimated 78% of these pregnancies are unintended (Guttmacher, 2004). Although the teen birth rate has declined 30% between 1991 and 2002 (National Vital Statistics Reports, 2003), each year in the United States, 800,000–900,000 adolescents ages 19 or younger become pregnant (National Campaign to Prevent Teen Pregnancy, 2005). Each year, there are 84 pregnancies per 1000 women aged 15–19 in the United States; however, in Hawaii, this rate is higher with 93 pregnancies annually per 1000 women aged 15–19 (National Campaign to Prevent Teen Pregnancy).

Despite the number of safe effective contraceptive methods available, pregnancy among teenagers is still prevalent. These consistently high rates of adolescent pregnancies in the United States continue to generate public concerns, as adolescent pregnancy has been associated with adverse health and social consequences. Adolescent mothers, particularly those under 17, are more likely to have truncated education, lower paying jobs, higher levels of unemployment, larger families with close spacing of children, and a higher likelihood of marital disruption, future out-of-wedlock pregnancies, low-birthweight babies, and poverty status (Aquilino & Bragadottir, 2000). With nearly one million teenage pregnancies occurring each year in the United States, costing 7 billion dollars annually (National Campaign to Prevent Teen Pregnancy, 2005), an understanding of adolescents’ decision making for contraception is one of the first steps toward creating solutions for this problem.

Literature review

Adolescent decision making has been previously explored from multiple avenues, many of which are directly relevant with regard to understanding choices made about contraception use. Some have examined the general development of competence in adolescent decision making (Friedman & Mann, 1993; Gordon, 1990; Inhelder & Piaget, 1958; Janis & Mann, 1977; Mann, Harmoni, & Power, 1989; Ormond, Luszcz, Mann, & Beswick, 1991). As adolescents develop formal operational reasoning with age, they are more capable of considering various actions and solutions to a problem, hypothesizing about how personal actions result in various consequences, and considering chance and probability relative to their actions. The development of these faculties may allow for more insight and better decisions regarding contraceptive use. Other researchers have evaluated adolescent decision making in terms of cognitive ability, academic factors, and contraceptive decision making.

Increased age (Green & Johnson, 1992; Holden & Nelson, 1993; Ormond et al.; Rogel, Zuehlke, Petersen, Tobin-Richards, & Shelton, 1980; Sachs, 1985), and higher academic achievement (Sandler, Watson, & Levine, 1992), enable adolescents to function at a higher cognitive level and increase competency in decision making.

Others have examined the relationship between adolescent self-esteem and sexual and contraceptive decision making. Higher self-esteem has been associated with increased and more effective contraceptive use (Chapman & Mullis, 2000; Herold, Goodwin & Lero, 1979; Holmbeck, Crossman, Wandrei, & Gasiewski, 1994; Rosenthal, Moore, & Flynn, 1990). Furthermore, self-confidence has been positively related to competency and coping in decision making with regard to sexual intercourse (Friedman & Mann, 1993; Rosenthal et al.; Salazar et al., 2004; Spencer, Zimet, Aalsma, & Orr, 2002). In contrast, adolescents with higher self-esteem may engage in more unprotected intercourse (Cole, 1997; Paul, Fitzjohn, Herbison, & Dickson, 2000).

Last, some researchers have examined the role of ethnicity and cultural influences on contraceptive decision making and found that different cultural values and beliefs play a large role in decisions of contraceptive use. Within the Native American’s cultural belief system, pregnancy validates the female role and contraception is deterred until after the first child (Horn, 1983). African Americans think adolescent pregnancy is more acceptable and many myths and misconceptions are associated with the lack of contraception (Horn). Caucasian adolescents have mixed views regarding pregnancy; however, pregnancy is not supported by their families (Horn). A strong family influence, family protection, and virginity are highly valued among Hispanic females (Villarruel, 1998). Similar to Hispanics, Pacific Islanders are more likely to expect parental disapproval if they became sexually active (Schuster, Bell, Nakajima, & Kanouse, 1998). Hawaiians do not censure adolescent pregnancy and welcome the babies into the family (Pukui, Haerrig, & Lee, 1983). Asian and Pacific Islander populations are unique in their health belief system. Few studies have been conducted to study adolescent self-esteem, decision making, and contraceptive behavior in Asian and Pacific Islander adolescents in Hawaii.

Conceptual framework

The theory used to guide this study was Janis and Mann’s (1977) conflict theory of decision making that involves using a stress and coping framework. They view the decision-making process as one that involves choice, commitment, and conflict as well as the potential for loss. The decision maker goes through the stages of choosing the
best course of action and makes a commitment to the alternative chosen. When the choice is made, the decision maker may experience decisional conflicts about the final course of actions related to possible consequences of loss. Anticipatory regret about these potential losses leads to degrees of decisional conflict and stress (Chambers & Rew, 2003).

Janis and Mann (1977) have generated four basic patterns of coping with the stress that is generated by a difficult or conflictive decision. These patterns of coping are further categorized into two groups: adaptive and maladaptive. The adaptive category, called the vigilant decision maker, is the highest level of decision making and requires the performance of a thorough information search, and the ability to assimilate new information. In the maladaptive category, the nonvigilant decision maker is viewed as an incompetent decision maker, who makes poor decisions when faced with a vital choice that has serious consequences. The maladaptive category includes three coping patterns: complacency, cop-out, and panic. Complacency occurs when the decision maker ignores information about risks and losses and decides to continue the present course of action or choose whichever new course of action is suggested. Cop-out occurs when the decision maker escapes conflict by procrastinating or shifting the responsibility to someone else. Panic occurs when the decision maker panics and frantically searches for a way out of dilemmas and then impulsively chooses a solution.

Conflict theory also predicts that people who have a specific sense of self-esteem and self-confidence in their decision-making ability, or decisional self-esteem, are associated with a positive general self-concept and are more likely to engage in vigilant decision making. Conversely, those that have low self-esteem or low self-confidence experience more stress and are likely to practice hypervigilant, panicky, defensive avoidance (evasiveness–cop-out), or compliant decision making (Mann et al., 1989).

Global self-esteem

During adolescence, identity formation occurs and with it the important development of self-esteem (Steinberg, 2005). In the literature reviewed for this study, there was no consensus as to the conceptualization and operational definition of self-esteem. Most researchers investigating the relationship of self-esteem and adolescent behavior in relation to sexual activity have used a generalized or global self-esteem scale. Rosenberg (1965) defines self-esteem as the evaluation the individual makes and maintains with regard to himself, which is expressed as an attitude of approval or disapproval. This study operationalized global self-esteem using Rosenberg’s definition and the Self-Esteem Scale.

Janis and Mann’s (1977) model provides a valid framework for and can be particularly informative in examining adolescent contraceptive decision making. Contraceptive decision making clearly addresses the losses, conflict, and stress involved in decision making as well as the decision-making patterns described by Janis and Mann. This framework was used in the current study to explore the relationship between female adolescent self-esteem, decision making, and contraceptive behavior. The research questions addressed in this study were as follows:

1. What is the level of global self-esteem, decisional self-esteem, decision-coping patterns, and contraceptive behavior?
2. What is the relationship between age, global self-esteem, decision self-esteem, decision-coping patterns, and adolescent contraceptive behavior?
3. Is there a significant association between age, decision self-esteem, decision-coping patterns, and adolescent contraceptive behavior?

Methods

The participants in this cross-sectional study were recruited from four clinics and one physician’s office from different geographic locations from the Big Island of Hawaii, which resulted in a more diverse population. This convenience sample included 14- to 17-year-old females who came into the clinics for health care. Exclusion criteria included those who did not speak English and those who were seeking prenatal care. Demographic data collected consisted of age, grade, ethnicity, ethnic identification, adolescent’s living situation, and maternal and paternal education.

Instruments

Along with a data demographic questionnaire, three instruments were used to measure study variables: (a) Rosenberg’s Self-Esteem Scale (RSE) (Rosenberg, 1965), (b) Flinders Adolescent Decision Making Questionnaire (FADMQ) (Mann, Harmoni, Power, Beswick, & Ormond, 1988), and (c) a Sexual History and Contraceptive Use Questionnaire developed for this study.

Global self-esteem

Global self-esteem is defined as the sense of pride in oneself. It is the individual’s positive or negative attitude toward the self (Rosenberg, Schoenbach, Schooler, & Rosenberg, 1995). The RSE is a 10-item Guttman scale designed to measure self-esteem in high school students. Responses are on a 4-point Likert scale from strongly agrees, agrees, disagrees, and strongly disagrees. Scores range from 10 to 40, with low scores indicating low
self-esteem and the higher scores indicating higher self-esteem. Rosenberg’s scale has been validated for use with both male and female adolescent, and adult and elderly populations.

Decision self-esteem and decision-coping patterns

The FADMQ (Mann et al., 1988) is a 30-item self-report instrument measuring competent and maladaptive decision-making style. The response format ranges from almost always true, often true, sometimes true, and not at all true for me. There are three subscales: (a) the decision self-esteem scale measuring the respondent’s confidence in making decisions; (b) the vigilance scale assessing the reported use of considering goals, generating options, gathering facts, evaluating the consequences, reviewing the decision process, and implementing the decision; and (c) the maladaptive subscale measuring panic, cop-out, and complacency. On the vigilant decision-making and self-esteem scales, high scores represent competent decision making and confidence. A high score on the maladaptive scale indicates poor decision making (Mann et al., 1988; Ormond et al., 1991).

Sexual history and contraceptive use questionnaire

Using a response format of yes or no, the sexual history questionnaire asked about current and past sexual activity. The response format for the question how often contraception was used in the present and past ranged from (a) none of the time, (b) a few times, (c) half of the time, (d) most of the time, and (e) all of the time.

Procedure

Once the proposal was approved by the author’s dissertation committee and the University of Hawaii’s Committee on Human Subjects for waived parental consent, a collaborative meeting with the sites was conducted to discuss recruitment of study participants. Female adolescents who came into the clinic were approached by the clinic staff to determine if they were interested in participating in the study. If they were, they were given packets containing an invitation and information about the study, the survey, a list of high school counselors, a teen resource card, and consent to participate. As an incentive, once the survey was completed, the participant was given two movie tickets to use at her leisure. Surveys were collected from September 2005 to December 2005. In keeping with health information privacy requirements, no patient identification was included on any data sheets in this study.

Data analysis

Data analysis was carried out using SPSS Version 13 (“SPSS,” 2004) and consisted of descriptive statistics, a correlation matrix, and logistic regression. Analysis of data demographics was carried out using descriptive statistics, frequency distributions, and percentages on the ordinal data.

Results

Description of sample

A convenience sample of 98 ethnically diverse female adolescents participated in the study. The survey was distributed to five clinics and one physician’s office. Respondents ranged in age from 14 to 17 years with a mean of 16.8 (see Table 1). The respondents were asked two questions regarding ethnicity. The first indicated self-identified ethnicity and allowed participants to indicate more than one ethnicity. Respondents’ ethnicities were coded and categorized in the following groups: Hawaiian/part Hawaiian/Pacific Islander (48%) followed by Caucasians (17.3%), Asian/part Asian (25.5%), and Hispanic (9.2%). The second question indicated what ethnicity they identified with. Ethnic identification attempted to differentiate which ethnicity the respondents believed best represented her identity. The ethnicities the respondents identified with were Caucasians (33.7%) and Hawaiian/Part Hawaiian (33.7%). The rest of the population demonstrated ethnic identification diversity with 24% as Asian (Japanese, Chinese, Filipino, Korean) and 8.2% identified as Hispanic.

The typical respondent lived with both parents (36.7%); the majority of parents were high school graduates. The living situations were diverse; the largest group of participants, 36.7%, lived with both parents.

Analysis of categorical data demographics

Cross tab analysis, utilizing chi-square statistics, was used to examine associations between the demographic variables: (a) clinic sites, (b) ethnicity recoded, (c) ethnic identification recoded, (d) living situation recoded, and

| Table 1 Number and percentage of respondents by age and clinic site |
|-----------------------|------------------|------------------|
| **Frequency**         | **Percent**      |
| Age (years)           |                  |
| 14                    | 11               | 11.2             |
| 15                    | 12               | 12.2             |
| 16                    | 33               | 33.7             |
| 17                    | 42               | 42.9             |
| Waimea Women’s Center | 12               | 12.2             |
| Hamakua Health Center | 15               | 15.3             |
| Bay Clinic            | 20               | 20.4             |
| Kona Planned Parenthood | 43            | 43.9             |
| Private Practice Office | 8              | 8.2              |
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(e) maternal and (f) paternal education and sexual activity and contraceptive use. There were no significant associations between these demographic variables.

Research question 1: What is the level of global self-esteem, decisional self-esteem, decision-coping patterns, and contraceptive behavior?

Global self-esteem

The total scores possible for the RSE range from 10 to 40. The higher the score on the scale, the higher the participant’s self-esteem. The Cronbach’s alpha reliability statistic for the RSE was 0.85, indicating acceptable reliability. The scores of the participants ranged from 19 to 40, with a mean of 30.02. Five participants demonstrated a maximum level of self-esteem, gaining the highest score possible of 40. There were no unanswered items.

Decisional self-esteem and decisional coping vigilance

The highest total possible score on each of these subscales was 18. Higher scores represent higher decisional self-esteem and vigilance. Vigilance represents using goals, generating options, gathering facts, and evaluating the consequences and is considered adaptive decision making. A higher score represents competent decision making. The item total mean for decision self-esteem was 12.19 and for decision coping vigilance 10.29. Cronbach’s alpha reliability statistic for both scales was 0.7, indicating reliable internal consistency.

Decision coping—Maladaptive

The maladaptive scale was formulated by combining items related to panic, cop-out, and complacency. There were 18 items in this subscale with a total possible score of 54. The total item mean was 14.71. High scores represented maladaptive decision making. Cronbach’s alpha was 0.827 indicating reliable internal consistency for this scale.

Sexual history and contraceptive use questionnaire

The two questions in the survey addressing sexual activity were whether the participant ever had sex and was she currently sexually active. Notably greater than 71% reported they were currently sexually active at the time the survey was administered and greater than 86% responded they were sexually experienced. The combination of current sexual activity and contraception use was analyzed. The responses ranged from 19.4% sexually active and not using contraception to 52% sexually active and using contraception. For those not currently sexually active, 5.1% of respondents reported past contraceptive use all the time and 19.4% reported they never used contraception.

In order to answer the following two research questions, the subsample of those adolescents who were currently sexually active (n = 70) were used in the analysis. Contraceptive behavior was defined as adolescents who were sexually active and using contraception all the time and those who were sexually active and not using contraception all the time.

Research question 2: What is the relationship between age, global self-esteem, decision-coping patterns, and contraceptive behavior?

The Pearson’s product–moment correlation point-biserial statistical test was used to analyze correlations between the variables. In order to run this analysis, adolescent contraceptive behavior includes only those who were sexually active at the time the survey was administered (n = 70).

There were moderate positive correlations (p = 0.01) between RSE, the Flinders decisional self-esteem (r = 0.682), and Flinders decisional vigilance coping (r = 0.548) and negative correlations between the Flinders coping maladaptive scale and the RSE (r = -0.470), the Flinders decision self-esteem (r = -0.563), and decisional vigilance coping (r = -0.315). There was one significant negative correlation (r = -0.243, p = 0.05) between the maladaptive scale and contraceptive behavior (see Table 2).

Research question 3: Is there a significant association between age, decision self-esteem, decision-coping patterns, and adolescent contraceptive behavior?

Logistic regression was used to analyze the association between the independent variables: age, global self-esteem, decision self-esteem, decision coping (vigilant and maladaptive), and the dependent variable contraceptive behavior (see Table 3). The logistic regression also used only those who were sexually active at the time the survey was administered (n = 70).

Because of multicollinearity between the variables global self-esteem, decisional self-esteem, decision coping vigilance, and decision coping maladaptive, these variables were analyzed with age but independently. There were no significant associations between age, global self-esteem, decision self-esteem, decisional coping vigilance, and sexually active participants and contraceptive use. There was, however, a significant association (p < .05) between decision coping maladaptive and sexually active participants contraceptive behavior. For every one-unit increase on the maladaptive scale, the odds of using contraception were estimated to decrease by 7%, with 95% confidence that the odds ratio in the populations is between 0.86 and 1.00.
In this study global self-esteem, decisional self-esteem, and decision coping (vigilant and maladaptive) were examined in relation to sexual activity and contraceptive behavior, revealing statistically significant findings between maladaptive decision making and decreased contraceptive use in sexually active adolescent females. There were some points of interest in the demographics of the participants. The ages of participants in this study were more in the range of older middle adolescence, which is the group most likely to access family planning services (Holmbeck et al., 1994). This sample was multiethnic with almost half reporting Hawaiian/Part Hawaiian ancestry, although only 37.3% identified with the Hawaiians. Ethnic identification of the population in Hawaii is a subject of ongoing research.

Eighty-five percent of subjects (N = 98) were currently sexually active or sexually active sometime in the past. Seventy were sexually active at the time the survey was administered. The participants reported the current use of contraceptives, whether or not they were sexually active was 60%. This is somewhat lower when compared with the Hawaii School Health Survey (2002) that reported that 75% of high school students used contraception at the last intercourse.

When asked how often the participant used contraception when sexually active, 48% reported they used contraception all the time. Nine reported irregular use of contraceptives. This erratic use of contraception suggests that there is an underlying factor affecting the competency in contraceptive decision making. Researchers have outlined factors that lead to less competency in decision making, such as low academic skills, external locus of control, decrease in self-esteem, deceased future time orientation, and poverty (Holden & Nelson, 1993; Rogel et al., 1980; Sandler et al., 1992). During the transitional period of adolescence, changes occur in the adolescent’s life, which can directly impact their decision-making competency.

**Table 2** Correlation matrix of participants’ age, Rosenberg’s Self-Esteem and decision coping (vigilant and maladaptive), and sexual activity and contraceptive use

<table>
<thead>
<tr>
<th>Participants’ age</th>
<th>Rosenberg Self-Esteem Scale</th>
<th>Flinders decision self-esteem subscale</th>
<th>Flinders coping vigilance subscale, maladaptive</th>
<th>Sexually active using and not using contraceptives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson correlation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants’ age</td>
<td>1</td>
<td>-0.25</td>
<td>0.049</td>
<td>0.021</td>
</tr>
<tr>
<td><strong>Significance (two tailed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants’ age</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Rosenberg’s Self-Esteem Scale</td>
<td>-0.25</td>
<td>1</td>
<td>0.548**</td>
<td>-0.470**</td>
</tr>
<tr>
<td><strong>Significance (two tailed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants’ age</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Flinders decision self-esteem subscale</td>
<td>-0.009</td>
<td>0.682**</td>
<td>1</td>
<td>-0.563**</td>
</tr>
<tr>
<td><strong>Significance (two tailed)</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Participants’ age</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Flinders coping vigilance subscale</td>
<td>0.049</td>
<td>0.548**</td>
<td>0.509**</td>
<td>-0.315**</td>
</tr>
<tr>
<td><strong>Significance (two tailed)</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Participants’ age</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Maladaptive scale</td>
<td>0.021</td>
<td>-0.470**</td>
<td>-0.563**</td>
<td>-0.315**</td>
</tr>
<tr>
<td><strong>Significance (two tailed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants’ age</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Sexually active using and not using contraceptives</td>
<td>0.038</td>
<td>0.173</td>
<td>0.132</td>
<td>0.243*</td>
</tr>
<tr>
<td><strong>Significance (two tailed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants’ age</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

*p = 0.05. **p = 0.01.

**Discussion**

In this study global self-esteem, decisional self-esteem, and decision coping (vigilant and maladaptive) were examined in relation to sexual activity and contraceptive behavior, revealing statistically significant findings between maladaptive decision making and decreased contraceptive use in sexually active adolescent females. There were some points of interest in the demographics of the participants. The ages of participants in this study were more in the range of older middle adolescence, which is the group most likely to access family planning services (Holmbeck et al., 1994). This sample was multiethnic with almost half reporting Hawaiian/Part Hawaiian ancestry, although only 37.3% identified with the Hawaiians. Ethnic identification of the population in Hawaii is a subject of ongoing research.

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**Research question 1**

**Global self-esteem**

The results of the RSE are described as low self-esteem or high self-esteem. There is no clear demarcation as to different levels of self-esteem between these two ranges. In Hawaii, *The Adolescent Health Network’s Teen Health*
Advisor Report (1991) reported that 60%–70% of the survey respondents (N = 1335) reported having medium self-esteem. With this analysis in mind, for this study a mean of 30.02 constitutes a moderate level of self-esteem. This is congruent with the medium self-esteem levels noted in the Hawaii study.

In looking at the individual items that received the lowest scores measuring global self-esteem, adolescents felt useless at times and wished they could have more respect for themselves. These particular items suggest a sense of decreased self-worth or achievement.

The literature review shows no real consensus regarding contraceptive use and self-esteem. Salazar et al. (2004) reported that in sexually active female adolescents, self-esteem is correlated with more refusal of unprotected intercourse, while others (Spencer et al., 2002) report those with higher self-esteem were more likely to be virgins. Perhaps because of the self-reporting response style of the survey, self-esteem changes when the adolescent’s mood changes, explaining some of these discrepancies with other findings in the literature.

**Decision self-esteem and decision coping vigilance**

As there are no normal or unusual scores reported in the literature for the FADMQ, these scores were interpreted as moderate levels of decisional self-esteem and decision coping vigilance. In the decisional self-esteem scale, the items that scored lowest indicated poor decision making. In this study, the respondents’ lower scoring items reflected they would change their mind after making a decision, indicating a lack of confidence in their decisions. This seems to follow a trend of not quite feeling competent in their decision making, which is congruent with Mann et al.’s (1989) findings suggesting that as adolescents age across middle adolescence they become more competent decision makers.

**Decision coping—Maladaptive**

Higher scores on the maladaptive scale constitute less competent decision making. The decision-coping maladaptive scores were on the lower side, demonstrating that the participants were less likely to make impulsive, hasty decisions and were less likely to procrastinate. Out of all the scores, the higher scoring items on the scales reflected panic in decision making where decisions were made in a hurry and choices were made based on the first alternative given. This is consistent with Piaget’s development theory of formal operational reasoning. As adolescents develop, they are able to engage in perspective taking and reasoning about chance and probability, and they are cognitively able to envision and evaluate alternatives (Inhelder & Piaget, 1958). Adolescents need time to go through the process of making a decision. Unintended pregnancy, as surmised by Gordon (1990), is a result of the adolescents having difficulty in envisioning alternatives. These adolescents may have not yet reached the state of formal operational reasoning, which supports the idea that adolescents need time and alternatives in order to make competent decisions. The formal operator is able to see alternative solutions to a problem and is able to hypothesize how personal actions result in various consequences (Inhelder & Piaget). These results are congruent with Janis and Mann’s (1977) conflict theory of decision making. Those that have confidence and higher decisional self-esteem are associated with more vigilant and less maladaptive decision making.

**Research question 2**

The second research question revealed no significant relationship between female adolescents’ age, global self-esteem, decision self-esteem, decision coping (vigilant and maladaptive), and contraceptive behavior. These findings are different from Ormond et al.’s (1991), who found that increased age was significantly correlated with higher levels of decision self-esteem and decision coping vigilance and lower levels of maladaptive decision making. The findings of this study showed multicollinearity between global self-esteem, decision self-esteem, decision-coping vigilant and decision-coping maladaptive scales. Similar findings of multicollinearity were also noted by Friedman.

### Table 3 Results of logistic regression and independent variables age, global self-esteem, decision self-esteem, decision coping vigilance, and decision coping maladaptive and dependent variable sexually active and contraceptive use

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Significance</th>
<th>Exp (B)</th>
<th>95% confidence interval for exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.092</td>
<td>.290</td>
<td>.100</td>
<td>1</td>
<td>.752</td>
<td>1.096</td>
<td>.621 – 1.937</td>
</tr>
<tr>
<td>Global self-esteem</td>
<td>.095</td>
<td>.067</td>
<td>1.994</td>
<td>1</td>
<td>.158</td>
<td>.100</td>
<td>.964 – 1.255</td>
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<tr>
<td>Decision self-esteem</td>
<td>.106</td>
<td>.100</td>
<td>1.141</td>
<td>1</td>
<td>.285</td>
<td>1.112</td>
<td>.915 – 1.352</td>
</tr>
<tr>
<td>Decision coping vigilance</td>
<td>.149</td>
<td>.090</td>
<td>2.735</td>
<td>1</td>
<td>.098</td>
<td>1.160</td>
<td>.973 – 1.384</td>
</tr>
<tr>
<td>Decision coping maladaptive</td>
<td>-.074</td>
<td>.038</td>
<td>3.861</td>
<td>1</td>
<td>.049*</td>
<td>.929</td>
<td>.863 – 1.000</td>
</tr>
</tbody>
</table>

*p = 0.05.*
and Mann’s (1993) study of the coping patterns in decision making in Israeli and Australians adolescents. The findings of the RSE and the Flinders decision self-esteem were both in the moderate range for all these scales, establishing convergent validity for these two scales. Seemingly, as the scores of global self-esteem, decisional self-esteem, and decision coping vigilance went up, depicting more competent and confident decision making, the scores of the maladaptive scale went down, meaning they were less likely to be poor decision makers. This is also congruent with Janis and Mann’s (1977) conflict theory and previous research studies using this theory (Friedman & Mann, 1993; Hollen, 1998; Johnson, 1994; Okwumabua & Wong, 2003; Ormond et al., 1991). There were significant correlations between the maladaptive score and contraceptive use, where higher maladaptive scores were related to lower contraceptive use. This means that as maladaptive scores went up, there is the suggestion that with less competent or poor decision making, the use of contraception decreased, which is also consistent with the literature, that is, maladaptive or less competent decision makers make less competent decisions.

Research question 3

Results for the third question revealed no association between age, global self-esteem, decision self-esteem, and decision coping vigilance; however, there was an association between maladaptive or less competent decision making and decreased contraceptive use. These findings support the maladaptive coping part of Janis and Mann’s (1977) theory of vigilant (adaptive) and maladaptive decision making. This is also consistent with previous research studies using Janis and Mann’s model (Friedman & Mann, 1993; Hollen, 1998; Johnson, 1994; Okwumabua & Wong, 2003; Ormond et al., 1991) that those who scored higher on the maladaptive scale were less competent or poorer decision makers and, in this study, were less likely to use contraception when sexually active.

Several of the other independent variables, although not statistically significant, showed a trend toward the direction of significance (global self-esteem $p = .158$; decision self-esteem $p = .285$; decision coping vigilance $p = .098$). This leads one to believe that if the sample size was larger, the association between participants with higher levels of global self-esteem, decision self-esteem and decision coping vigilance, or more competent decision makers would be more likely to use contraception when sexually active.

Of the sexually active population in this study, little more than half (52%) were using contraception. While the scores on the maladaptive scales were low, depicting more competent decision making, one would expect more of the participants to use contraceptives. Perhaps in future research, with a larger sample size, the expected outcome of increased contraception may emerge.

Limitations

The small sample size of participants who were sexually active at the time of the survey may have affected the outcome of the analysis. The information obtained from this study was based on self-report survey that could be linked to potential biases related to social needs and social desirability. As this was a convenience sample of female adolescents seeking health care in a rural area on the Big Island of Hawaii, the results may not be generalizable to all adolescents in other communities. The FADMQ has only been used in Caucasian and African American populations. The Sexual History and Contraceptive Use Questionnaire designed for this study was not piloted in a representative sample of the study to determine its clarity.

Implications for practice

Adolescence is a time of life where decisions are made with little life experience. These decisions can have lifelong consequences. More research is needed to understand this vulnerable population. There have been inconsistencies in the literature regarding self-esteem, decision making, and contraceptive behavior. This study showed there is an association between maladaptive or less competent decision making and decreased contraceptive use. Through maturation, many adolescents cognitively have the ability to make decisions; however, this does not necessarily mean they will make the best decisions. Nurse practitioners (NPs) need to take an active role in creating strategies to facilitate competent decision making and be involved in research that includes studying measures of cognitive development and decision making, ways to help the adolescents engage in consequential thinking and the relationship context in which sexual and contraceptive decision making occurs, and family and partner relationships and their influences on adolescent decision making and contraceptive behavior. Self-esteem has proved to be complex and further research investigating the relationship of self-esteem to adolescent decision making and contraception.

Hawaii has higher teen pregnancy rates than the national average. NPs need to focus on improving adolescent decision-making skills and exploring the area of adolescent decision making so that interventions can be planned to help adolescents make competent decisions. As adolescents grows older, they access health care less often, so there are fewer opportunities to initiate and reinforce...
preventive healthcare measures. Many adolescents do not access health care for contraception. In a small community such as the Big Island of Hawaii, there is less privacy for the teen when seeking contraception from a healthcare facility. NPs need to explore different strategies whereby they can help adolescents in this type of community. One way is to develop multiservice centers that are school-based to provide an array of confidential services at one convenient location. Other strategies to engage adolescents to learn and practice decision-making strategies such as teaching decision making and role-playing different situations that require decision making in the school system should be explored. By role-playing or rehearsing what to do in difficult situations that require decision making, the adolescent will be more prepared to make competent decisions. NPs in the clinic setting need to allow adolescents time to make decisions. When a client is not ready to make a decision, explain options and then in a few days, have the client return to assess whether or not they made a decision. This will allow the adolescent to assimilate and take into account new information, resulting in a decrease of panicky decision making. Stimulating adolescents’ own thinking around not only sexual issues but also relationship and communication issues may facilitate a vigilant and increased competence in decision making. This can assist adolescents in gaining different perspectives and help them to coordinate improved decision making with respect to contraceptive use as well in other areas.

There are many high-risk teens with problems of substance abuse and risky behavior. The decision making of these high-risk adolescents can affect many aspects in their life. NPs need to explore decision making in this at-risk group. There are limited studies with multiethnic population such as Native Hawaiians and Asians in the area of adolescent self-esteem, decision making, and contraception. With the pregnancy rates in Hawaii higher than the national average, research is needed in the area of adolescent decision making involving different ethnic groups and in the development of culturally sensitive instruments to better explore areas of self-esteem and decision making with different ethnicities such as Asians, Pacific Islanders, and Native Hawaiians. Goals of research should be focused to enhance decision-making skills and improve adolescents’ knowledge on relationships and sexuality issues. By improving knowledge, increasing options, and encouraging insight, clinicians can plan relevant interventions for the prevention of adolescent pregnancy.

Finally, NPs need to engage in more research in generating a developmental theory of adolescent sexual and contraceptive decision making. The components of decision making and competency need to be further investigated so that a better model can be used to plan interventions.

Conclusions

Although adolescent pregnancy rates have decreased, the problem of adolescent pregnancy still exists and is of national public health concern. While this study has limitations, results did highlight one aspect of Janis and Mann’s (1977) conflict theory. There was an association between maladaptive or less competent decision making and decreased contraceptive use. Higher scores on the maladaptive scale represented less contraceptive use. The evaluation of self-esteem still proves to be complex with many inconsistencies in the literature. While this study did not determine any significant associations or correlations between female adolescents’ self-esteem, decision making, and contraceptive behavior, this area of research needs further investigation. In order to reduce the rate of early childbearing, adolescents need help in the area of making competent decisions so that they can make the right choices.

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References


