# The Relationships between Sense of Coherence, Identity Formation and Health-Promoting Lifestyle Behaviours among Thai College Women

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**Absract**

**Backgrounds:** Wellness educators have faced a great challenge to seek key factors to move young people toward the adoption of positive lifestyle behaviours. The assertion that sense of coherence SOC and identity formation play a central role in mediating the effects of various illness situations and contributes to wellbeing provided the rationale for testing their association with health-promoting lifestyle behviours (HPLBs). **Objectives:** This study focuses on the frequency which college women said that they engaged in HPLBs, and the correlation measures between SOC, identity formation, and HPLBs. **Methods:** A sample of three hundred and fifty college women in Udonthani Province was obtained by quota sampling to answer the three instruments to measure their HPLBs (spiritual growth, health responsibility, physical activity, nutritional habits, interpersonal relations, and stress management), SOC and identity formation. Four identity statuses included in the measurement were (a) identity achievement (commitment to a choice based on exploration of alternatives); (b) moratorium (currently exploring choices but not yet committed); (c) fore closure (committed based on little or no exploration of alternatives; and (d) diffusion (lack of exploration and commitment). **Results:** The mean overall rate of engagement in HPLBs was found to be 2.65 on a scale ranging from 1 for never to 4 for routinely. Total health-promoting behaviours were moderately correlated with SOC and identity achievement ($r$=.339 and .414, $p < 0.01$, respectively). Interestingly, SOC showed negative correlations with identity diffusion ($r$= -.345, $p < 0.01$). Identity achievement both in ideological and interpersonal domains were moderately correlated with HPLBs ($r$= .326 and .370, $p < 0.01$, respectively). **Conclusion:** Sense of coherence and identity achievement were considered significant factors for constructing HPLBs. Recommendations: Working together to guide young people to develop their identity achievement through exploring and committing to lifestyle choices and widen their SOC may help them engage in HPLBs and grow healthy.

**Keywords:** Health-promoting lifestyle behaviours, Sense of Coherence, Identity formation

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**BACKGROUNDS:** A Hhealth-promoting lifestyle consists of various dimensions such as proper nutritional habits, positive interpersonal relations and social connections, regular exercise, stress management, spiritual wellbeing, adequate sleep and avoiding harmful substance and high risk behaviours.1 Why one chooses to live a healthy versus an unhealthy lifestyle is not known. However, it does appear that one's sense of self has an impact on this choice. A number of studies which have investigated health-related behaviours, indicated that people behave in ways that uphold the identities they value.2-4 One's sense of self or identity has also been shown to contribute to overall well-being5-8 but at this date, there has been little to no research linking sense of self and identity to health promoting behaviours among college women in Thailand. Moreover, the assertion that SOC plays a central role in mediating the effects of various illness situations and contributes to health-promoting behaviours and wellbeing9-12 provided the rationale for testing its association with health-promoting lifestyle behviours (HPLBs).

To date identity formation has not been related HPLBs, however, it has been used to predict the rate of engagement in other health-related behaviours among young people, such as age of initial substance use13, and levels of alcohol consumption14. The other variable of concern, SOC, has been defined as an enduring tendency to see the world as more or less comprehensible, manageable, and meaningful9. SOC has been found to predict the level of engagement in HPLBs among colorectal cancer patients in Thailand15. It has also been found to be associated with psychosocial adaptation among high school students in this country16. There is some indication that identity development and SOC are related17. Yet, it is not clear if such a relationship would be apparent among young women, nor if it is, to what extent it would be related to HPLBs among this group. Understanding the behaviours of college woman in Thailand, especially as it relates to engaging in HPLBs may be of great import as women in this country have crucial roles as care givers and health educators in families and as skilled workers in many areas of the workforce.

**PURPOSE:** The purpose of this study is to identify the frequency with which college women in Thailand say they engage in health-promoting lifestyle behaviours (HPLBs) and the correlation measures between SOC, identity formation, and HPLBs.

**METHOD:** Three hundred and fifty college women in Udonthani Province were obtained by quota sampling to answer the three instruments to measure their HPLBs, SOC, and identity formation.The research followed the tenets of the Declaration of Helsinki and informed consent was obtained from all participants. Ethical approval was granted by Massey University Ethics Committee. The instruments used in this study were:

1. The Health-Promoting Lifestyle Profile II (HPLP II)1 assesses the rate with which respondents assert that they engage in HPLBs. The HPLP II is a 52-item instrument that employs a 4-point Likert scale from 'never' to 'routinely' to measure frequency of specific health

promoting behaviours. It yields a total score and six subscale scores including spiritual growth (9 items), health responsibility (9 items), physical activity (8 items), nutrition (9 items), interpersonal relations (9 items), and stress management (8 items).

2. The Sense of Coherence (SOC) Questionnaire developed by Antonovsky9 (1987) is composed of 29 items used for measuring orientation to life of each participant across three dimensions: comprehensibility (11 items), manageability (10 items), and meaningfulness (8 items). The scale presents in a 7 point Likert scale format, with numbers 1 and 7 being the extreme answers. It yields a single total score with a higher indicating a stronger level of SOC.

3. The Extended Version of the Objective Measure of Ego Identity Status (EOM-EIS) developed by Bennion and Adams18 (1986) is an identity instrument designed to measure ego identity status across two domains (ideological and interpersonal) on four types of identity (achievement, moratorium, foreclosure, and diffusion) yielding 8 subscores with each measured by 8 items. Thus, the scale includes a total of 64 items, 16 items for each identity status. Four identity statuses measurement included in the instrument are (a) identity achievement (commitment to a choice based on exploration of alternatives); (b) identity moratorium (currently exploring choices but not yet committed); (c) identity foreclosure (committed based on little or no exploration of alternatives; and (d) identity diffusion (lack of exploration and commitment). Participants respond to questions on a 6 point Likert scale (from 6 = strongly agree to 1 = strongly disagree).

All instruments were modified for the study population initially by literal translation into Thai. To ensure language consistency, the instruments were also back translated into English by a bilingual linguistics expert who had not seen the original version. The back translated copy was compared with the original English version by the investigators to identify language incongruities. The Thai translation was adjusted with corrective retranslation prior to its use. A pilot study was conducted with 56 college women to test the internal consistency of the three measurements and their applicability to this population. The Cronbach alpha levels of the three instruments in Thai version in this study ranged from .79 to .86 indicated good internal consistency and were acceptable. The relationships between the SOC score and each of the eight subscores of the EOM-EIS and HPLB-II and its subscales were assessed by using the Pearson correlation19. The assumptions underlying linear bivariate correlation were checked and none were found to be violated. Data from the three instruments was analyzed by using the SPSS Version 16.0 for Windows19.

**RESULTS:** All participants were females studying in their third or fourth year of a four year undergraduate program. Their mean age was 21.5 and ranged from 19-25. The analysis of Likert-type rating data indicated that mean scores of frequency of practices in the six dimensions of HPLBs reached 2.65 for total HPLP II, and ranged from a lowest frequency of 2.25 for physical activity to a higher frequency of 3.04 and 3.01 for spiritual growth and interpersonal relations respectively. Means and standard deviations for each measure are reported in Table 1. Means for

the other measurements were 126.21 for SOC, and 64.70, 55.65, 46.51, 52.18 for the four types of identity (achievement, moratorium, foreclosure, and diffusion, respectively).

**Table 1** The range of scores, mean scores and standard deviations for HPLP II and its subscales, sense of coherence, total scores of each identity statuses, and ideological and interpersonal identity domains

| | n | Possible Range of Score | Actual Range of Score | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Dependent variable:** | | | | | |
| Health Responsibility (9 items) | 350 | 1-4 | 1.33-4.00 | 2.44 | .51 |
| Physical Activity (8 items) | 350 | 1-4 | 1.13-3.88 | 2.25 | .51 |
| Nutritional habits (9 items) | 350 | 1-4 | 1.22-3.78 | 2.66 | .39 |
| Spiritual Growth (9 items) | 350 | 1-4 | 1.56-4.00 | 3.04 | .43 |
| Interpersonal Relation (9 items) | 348 | 1-4 | 1.67-4.00 | 3.01 | .43 |
| Stress Management (8 items) | 350 | 1-4 | 1.63-3.88 | 2.75 | .39 |
| Total HPLP II (52 items) | 350 | 1-4 | 1.71-3.58 | 2.65 | .32 |
| **Independent variable:** | | | | | |
| Identity Achievement | | | | | |
| Total (16 items) | 347 | 16-96 | 38-94 | 64.70 | 8.58 |
| Ideological (8 items) | 347 | 8-48 | 18-48 | 33.06 | 5.05 |
| Interpersonal (8 items) | 350 | 8-48 | 13-47 | 31.71 | 5.22 |
| Identity Moratorium | | | | | |
| Total (16 items) | 348 | 16-96 | 29-88 | 55.65 | 8.51 |
| Ideological (8 items) | 348 | 8-48 | 15-44 | 28.34 | 4.80 |
| Interpersonal | 349 | 8-48 | 11-47 | 30.47 | 5.10 |
| Identity Foreclosure | | | | | |
| Total (16 items) | 345 | 16-96 | 16-83 | 46.51 | 12.12 |
| Ideological (8 items) | 347 | 8-48 | 8-42 | 24.25 | 6.32 |
| Interpersonal (8 items) | 348 | 8-48 | 8-43 | 22.27 | 6.99 |
| Identity Diffusion | | | | | |
| Total (16 items) | 342 | 16-96 | 25-82 | 52.18 | 9.33 |
| Ideological (8 items) | 347 | 8-48 | 11-43 | 27.04 | 5.59 |
| Interpersonal (8 items) | 345 | 8-48 | 10-40 | 25.18 | 5.27 |
| Sense of Coherence (29 items) | 350 | 29-203 | 76-192 | 126.21 | 17.66 |

**The Pearson Correlations**

Table 2 presents the Pearson correlation matrix of the dependent variables and the five independent variables. The total relationship of the independent variables (SOC, identity achievement, moratorium, foreclosure, and diffusion) with the dependent variables (total HPLP II), and the correlations of the independent variables with each other are given in the correlation matrix. The Pearson correlation coefficients (r) express the direction and strength of the

association between each pair of variables. Total health-promoting behaviours were moderately correlated with SOC and Identity Achievement (r=.339 and .414, $p < 0.01$, respectively). Interestingly, SOC showed negative correlations with identity diffusion (r= -.345, $p < 0.01$).

**Table 2** The Pearson correlation coefficients for HPLP II, SOC, and the four types of identities

| | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| (1) Health-Promoting Behaviours (total HPLP II) | .339** | .414** | .228** | .130* | -.114* |
| (2) Sense of Coherence (SOC) | - | .178** | -.150** | -.125* | -.345** |
| (3) Identity Achievement (Ach) | | - | .450** | .134* | .018 |
| (4) Identity Moratorium (Mor) | | | - | .328** | .454** |
| (5) Identity Foreclosure (Fore) | | | | - | .399** |
| (6) Identity Diffusion (Dif) | | | | | - |

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

**Table 3** The Pearson correlation coefficients for ideological identities, interpersonal identities and total HPLP II

| Identity | HPLP II | |
|---|---|---|
| Ideological: | | |
| (1) Achievement | .326** | |
| (2) Moratorium | | .110* |
| (3) Foreclosure | | .081 |
| (4) Diffusion | | -.090 |
| Interpersonal: | | |
| (5) Achievement | .370** | |
| (6) Moratorium | .232** | |
| (7) Foreclosure | .150** | |
| (8) Diffusion | | -.096 |

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Identity achievement both in ideological and interpersonal domains were moderately correlated with HPLBs (r= .326 and .370, $p < 0.01$, respectively), as shown in Table 3.

## DISCUSSION

The similar trend of the HPLP II scores pertaining to the lowest mean in physical activity and the highest mean in spiritual growth and interpersonal relations was also reported in other studies21-23. They were in agreement with the results from the current study providing partial support for the validity of the results from HPLP II self-report measure. These findings were also consistent with a cross-cultural study of HPLBs which showed the highest mean in interpersonal relations and spiritual growth among Japanese and American college students24; among university students in Hong Kong22; and among Canadian baccalaureate nursing students25 . While the American college students showed the lowest score in health responsibility dimension, Eastern people often show the lowest score in exercise dimension24. Physical activity or exercise in the sense of Asian women is usually done through their daily activities like household chores and walking to places because it is not a tradition to exercise in a gym for Eastern culture22. Mostly, women need social support for their physical activity, as reviewed from 91 studies from diverse racial and ethnic groups26.

The high average scores of HPLBs were found in items that say: believe that my life has purpose (mean=3.45 □ .69); maintain meaningful and fulfilling relationships with others (mean=3.35 □ .66); look forward to the future (mean=3.54 □ .65); and spend time with close friends (mean=3.26 □ .75). These aspects are in spiritual growth and interpersonal relations dimensions of HPLBs, and there is no surprise that is why HPLBs, when examine these items parallel with SOC questionnaire, are consistent with the characteristics of people with strong SOC. The low average scores of HPLBs are found in items 4 and 41 of the HPLP II. They are aspects of saying: follow a planned exercise program (mean=1.98 □ .72); and practice relaxation or meditation for 15-20 minutes daily (mean=1.83 □ .78). Accordingly, it is important to examine these activities of healthy behaviours are time consuming and need higher investment efforts and motivation, and also more empowerment from social network.

The maximum scores of identity achievement domains inferred a developing trend towards achievement identity in this group of Thai college women. It makes sense that exploration and commitment which are prominent characteristics of identity achievement would be the important contribution to people's engaging in HPLBs. Commitment has also been claimed by Pender27 1996 (p. 67) to be a significant component in the revised Health-Promoting Model. Moreover, Antonovsky9 (1987) reviewed that SOC has some similarities with people who have the characteristics of hardiness and commitment. From the general interpretation of the whole picture of the results, it could convince that people without characteristics of exploration and commitment seem to hardly engage in HPLBs and also negatively related to SOC characteristics. As emphasized by Marcia28 (1989) that identity formation is not only a 'developmental process' but also an 'environmental process' where individual's choices and decision-making are influenced by the social contexts. It is crucial to develop the community resources for optimum identity formation

The mean score of SOC in this group of Thai college women was 126.2. This was congruent with the undergraduates in the United States whose mean score was 129.5. These people, including ones in this research, scored on the low side compared to the normative data obtained from 20 Western countries12. Whereas Thai adults who were parents or grandparents scored on the middle range (143.4) compared to the normative data20. Considering the highest rang of SOC which belongs to Swedish adults with hi-risk childhood and religious people12, it seems that strong SOC of people needs times to go through tough life's experiences and deep spirituality. This might explain why adolescents usually score on the lower end of SOC. The results showed that college women with strong SOC were less likely to be diffused in identity formation. The fact that SOC is the characteristic of coping with the complex stressors in the course of living. This interpreted by Cederblad et al20 (p. 587) that the three components of SOC are: "(1) ability to clarify and structure stressors, (2) to flexibly mobilize coping mechanism, (3) approaching a problem situation as a challenge to be met." These components of SOC and identity achievement may contribute to healthy behiors which are parts of the assets of HPLBs in

terms of exploration and commitment. Given that the participants are all women, this information is useful for college women identity and HPLBs development aspects.

## LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

As sampling units were drawn from non-probability sampling, there was no assurance that every subject had a chance to be included. Results may be less representative and also generalizing the data to the other group of population may be limited29 . The data was collected by self-report instruments. Consequently, there was no assurance for accuracy and could be biased because subjects might answer in the way that they judged to be the more desirable response pattern. More, the instruments were translated from English language; therefore, incompletion of meaning related to translation may have occurred. Nevertheless, the fact that all instruments are psychometrically sound may abate these limitations to some degree. Despite these limitations, the findings provide useful related factors for guiding health promotion interventions for Thai college women. It would be useful to repeat the study with proper methods of probability sampling in different cohort, gender, or settings.

## CONCLUSION

Adolescence is a timely period to form and consolidate HPLBs, and also at the same time, their firm sense of self. There is evidence that achieving a sense of identity is a task for achieving health-promoting lifestyle behaviours. The results in this study imply that exploration and commitment statuses of identity achievement are important factors related to healthy behaviours among Thai female adolescents. It would be reasonable to conclude, at this point, that comprehensibility, meaningfulness, manageability, exploration, and commitment are the essential components added for behavioural modification for health-promoting behaviours goals in this women age group. The current results are the first which provide a basic understanding of the relations among SOC, Identity Achievement, and HPLBs among Thai college women in northeastern Thailand. Sense of Coherence seems to connect Thai college women to achieve a sense of self and engage in healthy behaviours, and help them have less diffusion identity. Wellness educators and health promotion professionals should develop strategies to help adolescents establish strong SOC and sense of identity as a means to HPLBs.

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