Examining Self-Care Behaviors and Their Associated Factors Among Adolescent Girls With Dysmenorrhea: An Application of Orem’s Self-Care Deficit Nursing Theory

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Key words
Dysmenorrhea, Orem’s self-care deficit nursing theory, path analysis, self-care

Abstract

Purpose: To test a hypothesized model that examines the relationship between selected basic conditioning factors, self-care agency, and self-care behaviors among adolescent girls with dysmenorrhea using Orem’s self-care deficit nursing theory as a framework.

Design: This was a predictive correlational study conducted with a total of 531 secondary school girls.

Methods: Self-care agency, self-care behaviors, and 11 variables that have been theoretically or empirically justified in previous studies as relevant to basic conditioning factors were selected and collected by means of structured questionnaires. Path analyses were performed to test the hypothesized linkages among variables.

Findings: Path analysis revealed that age and received menstrual education had both direct and indirect effects through self-care agency on self-care behaviors. Mother’s and father’s educational level, pain intensity, and self-medication used when experiencing dysmenorrhea only affected the self-care behaviors directly.

Conclusions: This is the first study that provided information about the relationship between basic conditioning factors, self-care agency, and self-care behaviors among adolescent girls with dysmenorrhea. Knowledge of the factors influencing self-care behaviors in these adolescent girls will assist healthcare professionals in developing effective interventions to promote self-care and ameliorate the adverse impact of this condition.

Clinical Relevance: Interventional strategies that aim at promoting self-care behaviors among adolescent girls with dysmenorrhea should strengthen girls’ self-care agency and should target those with a younger age, higher pain intensity, mother with a higher educational level, father with a lower educational level, and those who do not take self-medication for dysmenorrhea.

Dysmenorrhea is a common menstrual problem among adolescent girls (Banikarim, Chacko, & Kelder, 2000; Bettendorf, Shay, & Tu, 2008). Prevalence rates have been reported ranging from 20% to 90% (Campbell & McGrath, 1999; Davis, Westhoff, O’Connell, & Gallagher, 2006). Dysmenorrhea is a distressing condition affecting not only the academic and social aspects of adolescent girls, but it is also the leading cause of their short-term school absenteeism (Banikarim et al., 2000). Adolescent girls prefer performing self-care to relieve their discomfort instead of seeking medical advice (Chiou & Wang, 2008; Lau, Yu, Cheung, & Leung, 2000). The important
role of self-care in relieving dysmenorrhea has also been reported (Cheng & Lin, 2010; Wong & Ip, 2012; Wong, Lai, & Tse, 2010). However, little is known about how adolescent girls exercise self-care and the factors associated with it. Understanding adolescents’ self-care behaviors and their associated factors could help healthcare professionals to identify potentially harmful or ineffective behaviors, and therefore formulate appropriate management and education plans (Hillen, Grbacak, Johnston, Straton, Keogh, 1999).

This study was guided by Orem’s self-care deficit nursing theory. According to Orem (2001), a person initiates and performs self-care for maintaining life, healthful functioning, and well-being. He or she must acquire self-care agency for self-care, and self-care agency is influenced by basic conditioning factors (BCFs). BCFs include age, gender, developmental state, environmental factors, family system factors, sociocultural factors, health state, pattern of living, healthcare system factors, and availability of resources (Orem, 2001). These BCFs may influence an individual’s ability to participate in self-care activities or modify the kind or amount of self-care required. On the basis of Orem’s theory and literature review, potential variables of BCFs postulated as influencing self-care behaviors or self-care agency of adolescent girls suffering from dysmenorrhea were identified.

The relationship among age, self-care agency, and self-care behaviors of adolescent girls suffering from dysmenorrhea was initially examined. Previous studies proposed that self-agenty and self-care behaviors likely increase as girls increase in age (Moore, 1993; Zhimin, 2003). However, other studies (Cull, 1996; Dashiff, McCaleb, & Cull, 2006; McCaleb & Cull, 2000) documented a negative correlation between age and disease-related self-care.

Family system factors are commonly defined as mother’s and father’s occupation and education, living situation, marital status, birth order, and social and emotional support (Moore & Picther, 2000). Adolescent girls usually sought advice regarding dysmenorrhea self-care from their mothers (Chiu & Wang, 2008); educated mothers may also provide detailed information regarding dysmenorrhea (Finlay, Jones, & Kreitman, 2000); thus, a mother’s educational level possibly influenced the self-care of adolescent girls suffering from dysmenorrhea. A father’s educational level also possibly influenced self-care (Cull, 1996; McCaleb & Cull, 2000).

For sociocultural factors, Orem (2001) did not provide a definition for it but included culture, education, occupation, and experiences as sociocultural factors without further elaboration. In Chinese culture, illness occurs when there is an imbalance between yin–yang, hot–cold, dry–wet, as well as “qi” and holism (Ma, 1999). Menstrual symptoms, such as dysmenorrhea, can be interpreted as weakness in the general health of women and is caused by “blood” and “qi” stagnation that results in an imbalance of yin and yang in the body. Given that culture determines the ways in which symptoms, such as menstrual pain, were handled (McMaster, Cormie, & Pitts, 1997), culturally specific self-care behavior on dysmenorrhea, such as the use of herbal remedies and acupressure, were reported in previous studies (Cheng, Lu, Su, Chiang, & Wang, 2008; Wong et al., 2010). However, the influence of culture on self-care agency and behavior of dysmenorrhea are difficult to assess using a quantitative approach; a qualitative approach is required to develop insights into the influence of culture on both aspects (Orem, 2001).

For instance, adolescent girls with a high family income may be more resourceful than those with low family income; thus, the former may exhibit a higher level of self-care agency and self-care behavior than the latter (Baker & Denyes, 2008). However, using a multiple regression model to predict self-care behaviors, Chang and Chuang (2012) found that the socioeconomic condition of the family was not significantly associated with dysmenorrhea self-care behaviors among adolescent Taiwanese girls.

Measurement of the health state has been either general, such as the presence or absence of health problems (Callaghan, 2006), or specific to the disease condition, such as duration of illness (Allinger & Dear, 1993) or pain intensity (Zadinsky & Boyle, 1996). The regularity of the menstrual cycle, duration of menstruation, and pain intensity were possibly related to self-care behaviors toward dysmenorrhea (Chang & Chuang, 2012; Chia et al., 2013).

Patterns of living encompass all the actions people perform daily (Orem, 2001). Limitation in daily activities affects self-care, and the relationship of these activities with self-care was also noted in previous studies (Chia et al., 2013; Ortiz, 2010). The healthcare system is characterized by disciplines, such as nursing and medicine (Orem, 2001). Study has suggested that medical consultation regarding dysmenorrhea influences self-care (Chiu, Wang, Hsu, & Liu, 2013).

Availability of resources influences the means to meet self-care measures (Orem, 2001). Prior experience of receiving menstrual education may influence the adoption of self-care behaviors for dysmenorrhea (Chiu et al., 2013); however, Chang and Chuang (2012) found that knowledge about dysmenorrhea was not significantly correlated with the adoption of self-care behavior among adolescent girls. Few studies reported that adolescent girls from Western countries prefer self-medication for dysmenorrhea (Agarwal & Venkat, 2009; O’Connell, Davis & Westhoff, 2006). However, self-medication is not under the construct of self-care among adolescent girls with
dysmenorrhea in Hong Kong (Wong, Ip, Choi, & Shiu, 2013). Thus, further research is required to test the relationship between self-medication and self-care behavior in a local context. Likewise, self-care agency influences self-care, as explained in Orem’s theory and previous studies (Slusher, 1999; Callaghan, 2006).

In summary, previous studies support the proposition and provide inconclusive evidence with regard to the relationship between BCFs, self-care agency, and self-care. However, no study to date was found to examine the role that BCFs and self-care agency play in the dysmenorrhea self-care behaviors. Even though existing theories provide insight into the factors necessary for self-care behavior, this should be tested before conclusions are made. Accordingly, a total of 13 variables were assessed. Eleven of these variables were BCFs, which included age, two family system factors (mother’s educational level and father’s educational level), one sociocultural factor (family income), three health state factors (regularity of menstrual cycle, duration of menstruation, and pain intensity), one pattern of living factor (limitations in daily activities due to dysmenorrhea), one healthcare system factor (medical consultation for dysmenorrhea), and two related to the availability of resources (received menstrual education and self-medication used when experiencing dysmenorrhea). The remaining variables were self-care agency and self-care behaviors for dysmenorrhea. A hypothesized model of self-care behaviors and their associated factors among adolescent girls with dysmenorrhea was proposed (Figure 1).

### Methods

#### Design and Sample

A cross-sectional, descriptive correlational design with a predictive approach was utilized to investigate the correlates of self-care behaviors among Hong Kong adolescent girls with dysmenorrhea. The sample size determination was based on a power analysis in the assessment of the root-mean-square error of approximation (RMSEA), one of the most commonly reported fit indices of path analysis (MacCallum, Browne, & Sugawara, 1996). A convenience sample of 531 girls was recruited from three secondary schools. Participants were...
13 years old or older and had experienced pain during the last three cycles. Girls who reported a history of gynecological disease or surgery or suffered from severe disease were excluded.

**Instruments**

**The Adolescent Dysmenorrheal Self-Care Scale.** The Adolescent Dysmenorrheal Self-Care Scale (ADSCS) was used to assess the adolescent girls’ self-care behaviors toward dysmenorrhea (Hsieh, Gau, Mao, & Li, 2004). Girls were asked to rate themselves on a 6-point Likert scale, with higher scores reflecting higher level of self-care behavior being practiced. The ADSCS has been translated into Chinese-Cantonese and validated in Hong Kong adolescent girls with dysmenorrhea with good reliability (Cronbach’s $\alpha = 0.94$; Wong et al., 2013). In this study, the Cronbach’s $\alpha$ coefficient for the entire scale was 0.92.

**The Exercise of Self-Care Agency Scale.** The Exercise of Self-Care Agency Scale (ESCAS) was used to assess the self-care ability of an individual (Kearney & Fleischer, 1979). It has been translated into Chinese-Cantonese and validated in Hong Kong adolescent girls with dysmenorrhea (Wong, Ip, & Shiu, 2012). The 35-item Chinese-Cantonese version (CC-ESCAS) measured four aspects of self-care agency: self-concept, knowledge and information seeking, passivity, and motivation. The reliability of the CC-ESCAS was good, with a Cronbach’s $\alpha$ of 0.92 (Wong et al., 2012). The Cronbach’s $\alpha$ coefficient of the entire scale in this study was 0.91.

**The Demographic Information Sheet.** The demographic information sheet, consisting of 11 items, was developed by the researchers with reference to previous literature to gather information related to selected BCFs (Chiou & Wang, 2008).

**Procedure**

Ethical approval was obtained from the ethics research committee of the study institution. All form two to seven secondary school female students were given a written information sheet in their classrooms. The researcher distributed a set of self-administered anonymous questionnaires to those who agreed to participate, including a demographic information sheet, the CC-ESCAS, and the CC-ADSCS.

**Data Analysis**

Data were analyzed using SPSS version 19.0 (SPSS Inc., Chicago, IL, USA) and LISREL Version 8.8 (Scientific Software International, Inc., Skokie, IL, USA), and the level of significance was set at $p < .05$. Descriptive statistics were used to summarize the selected BCFs and all continuous variables, namely the CC-ESCAS and CC-ADSCS scores of the participants.

Path analysis was used to examine the relationship between selected BCFs, self-care agency, and self-care behaviors (see Figure 1). Parameters of the path model were estimated by the robust maximum likelihood method, which allows violation of the multivariate normality assumption (Satorra & Bentler, 1994). The overall fit of the path model was examined by the goodness-of-fit indices, including a nonsignificant chi-square value, the RMSEA, standardized root mean square residual (SRMR), non-normed fit index (NNFI), comparative fit index (CFI), and adjusted goodness-of-fit indices (AGFI; Schermelleh-Engel, Moosbrugger, & Müller, 2003). RMSEA and SRMR below 0.08 indicating an acceptable fit. The values of AGFI, CFI, and NNFI usually ranged from 0 to 1, with AGFI ≥ 0.90 and CFI and NFI ≥ 0.97, indicating a good fit to data (Schermelleh-Engel et al., 2003). The overall model fit was determined by theoretical consideration, as well as by adding new paths based on modification index, and by deleting insignificant paths.

**Results**

**Basic Conditioning Factors, Self-Care Agency, and Self-Care Behaviors**

The ages of the girls ranged from 13 to 19 years (mean = 15.69, $SD = 1.4$). Their mean pain intensity in the previous three menstrual cycles was 5.48 ($SD = 2.2$), measured by the pain visual analogue scale. The selected BCFs, self-care agency, and self-care behaviors of the participants are summarized in Table 1.

**The Path Model**

Path analyses were performed to examine the relationship between selected BCFs, self-care agency, and self-care behaviors. The chi-square was 44.95 and degree of freedom ($df$) was 9, with a significant chi-squared test result ($p = .00$). The goodness-of-fit indices for the hypothesized model were RMSEA = 0.09, AGFI = 0.74, CFI = 0.98, NNFI = 0.79, and SRMR = 0.05. The results suggested the model did not fit the data. In order to improve the goodness-of-fit of the model, the model was revised according to the modification index as well as in conjunction with theoretical justification. The largest modification index (62.94) was from the received
Table 1. Summary of Selected Basic Conditioning Factors (BCFs)

<table>
<thead>
<tr>
<th>Selected BCFs</th>
<th>Total (N = 531)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>n ( %)</td>
</tr>
<tr>
<td>Mean, SD</td>
<td>15.69 1.4</td>
</tr>
<tr>
<td>Father’s educational level</td>
<td></td>
</tr>
<tr>
<td>Secondary or below</td>
<td>438 82.5</td>
</tr>
<tr>
<td>University or above</td>
<td>93 17.5</td>
</tr>
<tr>
<td>Mother’s educational level</td>
<td></td>
</tr>
<tr>
<td>Secondary or below</td>
<td>461 86.8</td>
</tr>
<tr>
<td>University or above</td>
<td>70 13.2</td>
</tr>
<tr>
<td>Family income (HK$)</td>
<td></td>
</tr>
<tr>
<td>&lt;20,000</td>
<td>318 59.9</td>
</tr>
<tr>
<td>≥20,001</td>
<td>213 40.1</td>
</tr>
<tr>
<td>Menstrual cycle</td>
<td></td>
</tr>
<tr>
<td>Regular (21–35 days)</td>
<td>421 79.3</td>
</tr>
<tr>
<td>Irregular (16–20 days/36–40 days/other)</td>
<td>110 20.7</td>
</tr>
<tr>
<td>Menstruation duration (days)</td>
<td>5.54 1.07</td>
</tr>
<tr>
<td>Pain intensity in the past 3 months (0–10)</td>
<td>5.48 2.2</td>
</tr>
<tr>
<td>Mean score, SD</td>
<td></td>
</tr>
<tr>
<td>Not affected</td>
<td>61 11.5</td>
</tr>
<tr>
<td>Affected</td>
<td>470 88.5</td>
</tr>
<tr>
<td>Received menstrual education</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>222 41.8</td>
</tr>
<tr>
<td>Yes</td>
<td>309 58.2</td>
</tr>
<tr>
<td>Medical consultation for dysmenorrhea</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>503 94.7</td>
</tr>
<tr>
<td>Yes</td>
<td>28 5.3</td>
</tr>
<tr>
<td>Self-medication for dysmenorrhea in the past 3 months</td>
<td>442 83.2</td>
</tr>
<tr>
<td>No</td>
<td>89 16.8</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Chinese-Cantonese Adolescent Dysmenorrheic Self-Care Scale</td>
<td>124.0 31.6</td>
</tr>
<tr>
<td>Mean score, SD</td>
<td></td>
</tr>
<tr>
<td>Chinese-Cantonese Exercise of Self-Care Agency Scale</td>
<td>85.7 16.7</td>
</tr>
</tbody>
</table>

Wong et al. (2015) found that menstrual education to self-care agency. Because this parameter is meaningful and theoretically sound, a direct path from received menstrual education to self-care agency was added. An inspection of the t-value found that paths (from regularity of menstrual cycle, duration of menstruation, limitation in daily activities due to dysmenorrhea, and medical consultation to self-care behavior) were insignificant and thus they were removed. Though further deleting the nonsignificant path from family income to self-care agency and self-care behavior would enhance the goodness-of-fit of the model, they were kept for future comparisons in different samples of socioeconomic background. The final model obtained is presented in Figure 2. The insignificance of the chi-squared test result ($p = .38$) and the goodness-of-fit indices (RMSEA = 0.02, AGFI = 0.92, CFI = 1.00, NNFI = 1.0, SRMR = 0.02), with all individual paths significant at $p < .05$, indicated that the final model fit to the data. The standard path coefficients and proportions of variance of the endogenous variables explained ($R^2$) are shown in a path diagram (see Figure 2). The final model accounted for 46% and 25% of the variance of self-care behaviors and self-care agency, respectively. The total effects, both direct and indirect, of the selected BCFs of self-care behaviors are shown in Table 2.

Discussion

The present study is the first to adopt Orem’s self-care deficit nursing theory to investigate the relationship between selected BCFs, self-care agency, and self-care behaviors in adolescent girls with dysmenorrhea. Previous studies only assumed a simple associative relationship between BCFs and self-care behaviors (Chang & Chuang, 2012; O’Connell et al., 2006). There is a lack of research investigating the interrelationships among these variables. Additionally, knowledge about non-Western girls in this context is even scarcer. The incorporation of a comprehensive set of BCFs allows a more thorough investigation of this phenomenon. The final model accounted for 46% and 25% of the variance of self-care behaviors and self-care agency, respectively. Using path analysis to analyze all the variables simultaneously, the results show an overall path model linking the selected BCFs, self-care agency, and self-care behaviors with a directional pathway. This can help to enhance the understanding of the interrelationships between these variables. Six basic conditioning factors were identified as affecting the adoption of self-care behaviors among adolescent girls with dysmenorrhea. Four BCFs (pain, father’s educational level, mother’s educational level, and self-medication) were not mediated by self-care agency. Age and received menstrual education significantly influence the self-care behaviors, and they are mediated by self-care agency.

The positive relationship between self-care agency and self-care behaviors in this study supports Orem’s theory. Indeed, previous studies have found that self-care agency is associated with self-care behaviors (Anderson, 2001; Callaghan, 2006); the results not only add to the growing body of evidence that self-care agency significantly influences self-care behaviors, but also highlight the significance of self-care agency as a mediator in promoting self-care behaviors among adolescent girls with dysmenorrhea. Four BCFs (pain, father’s educational level, mother’s educational level, and self-medication) were not mediated by self-care agency. Age and received menstrual education significantly influence the self-care behaviors, and they are mediated by self-care agency.
In relation to the measurement of family system factors, contrary to the widely held notion that mother’s educational level would promote self-care behaviors for their daughters, our results revealed a negative effect of mother’s educational level on the self-care behaviors of her daughters. Such an effect may be caused by the parenting style of Chinese mothers. Influenced by the Chinese culture, mothers have taken on the role of bearing all the responsibility for their children and deal with every aspect of their care, which results in overprotection. Although some studies demonstrated that mothers were the main source of knowledge for menstruation issues (Chan, Yiu, Yuen, Sahota, & Chung, 2009; Davis et al., 2006), it appears that educated mothers in Hong Kong not only pass their knowledge to their daughters, but also “do” it for them. As a result, adolescent girls rely on their mothers to care for all their menstruating problems and seldom perform self-care. These findings highlight the need to recognize the mother’s educational level as a major element for influencing adolescent girls’ self-care behaviors; interventions should not only help mothers to increase their knowledge and self-care skills related to dysmenorrhea, but also educate them to facilitate their daughters to perform self-care instead of performing care for them. In contrast, girls who have a comparatively well-educated father were reported to have a higher level of self-care behavior. The result was consistent with the finding of McCaleb and Cull (2000) that as the father’s education level increased, so did self-care practices of adolescents. It is possible that educated

**Table 2.** Summary of Standardized Direct, Indirect, and Total Effects of the Selected Basic Conditioning Factors on Self-Care Behaviors

<table>
<thead>
<tr>
<th>Variables on the final path model</th>
<th>Self-care behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct effect</td>
</tr>
<tr>
<td>Age</td>
<td>0.14*</td>
</tr>
<tr>
<td>Mother’s higher educational level</td>
<td>-0.28*</td>
</tr>
<tr>
<td>Father’s higher educational level</td>
<td>0.29*</td>
</tr>
<tr>
<td>Pain intensity</td>
<td>-0.15*</td>
</tr>
<tr>
<td>Received menstrual education</td>
<td>0.14*</td>
</tr>
<tr>
<td>Self-medication for dysmenorrhea</td>
<td>0.30*</td>
</tr>
</tbody>
</table>

*p < .05.

Figure 2. Path diagram relating selected basic conditioning factors, self-care agency, and self-care behaviors among adolescent girls with dysmenorrhea.
Self-Care Behaviors for Dysmenorrhea

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fathers would have positive attitudes and would not impose any social restrictions on dysmenorrhea self-care behaviors or treat them as a taboo; thus, girls are more likely to perform self-care behaviors.

In relation to the measurement of health state and age, negative associations were evident for pain and self-care behaviors. The higher the pain level, the less self-care behaviors girls adopted. This may be because girls expect the pain as a normal part of the menstrual cycle or they tolerate the pain without resorting to self-care strategies. Nevertheless, the exact mechanism should be explored in further detail by using a qualitative approach. Meanwhile, the age of adolescent girls has a positive impact on self-care agency and self-care behaviors. Although this result was not supported by previous studies (McCaleb & Cull, 2000; O'Connell et al., 2006), the finding of this study is reasonable, as with increasing age, girls' self-care capability (self-care agency) increases and so do their self-care behaviors.

In relation to the availability of resources, self-medication was found to have a positive impact on self-care behaviors. In this study, only 16.8% of girls self-medicated for dysmenorrhea. This was comparable to the results of two local studies (Wong et al., 2013; Wong et al., 2012), but relatively lower than those found in other countries, which report higher rates of self-medication (O’Connell et al., 2006). Self-medication is not commonly employed in our sample, probably because girls perceive it as using prescription drugs and therefore associated with side-effects. Lack of knowledge about medication may also be a contributing factor. Despite the fact that self-medication was assumed as a kind of self-care behavior (Ortiz, 2010), current findings reveal a positive effect of self-medication on self-care behaviors. These results are in accordance with a previous finding that self-medication was not under the construct of self-care behaviors in Chinese adolescent girls with dysmenorrhea (Wong et al., 2013). This may be due to the fact that adolescent girls regard taking medication as a kind of medically orientated behavior that requires a doctor's prescription or advice instead of a self-initiated behavior.

With regard to menstrual education, receiving menstrual education has a positive impact on both self-care agency and self-care behaviors. This finding is similar to the findings reported by Chang and Chen (2008), which indicated that greater menstrual preparation and greater menstrual knowledge are significant predictors of positive menstrual healthcare behavior among elementary level female students. The provision of more information increases the likelihood of adoption of self-care behaviors (Chang & Chuang, 2012; Chiou & Wang, 2008).

This study likewise provides implications for clinical practice. Although some of the identified BCFs are non-modifiable (pain, father's educational level, mother's educational level, and age), a nurse could incorporate the findings of this study to identify adolescent girls who are at risk for self-care deficit and to develop an assessment tool to screen those who are at risk for lower level of self-care behavior, namely girls with a higher pain level, a younger age, or a mother with a higher educational level, and those who do not use self-medication, so that an individualized plan of care could be delivered to preempt the development of self-care deficits.

Moreover, this model can help to deepen our understanding of the effect of BCFs on self-care behaviors and the mediating role of self-care agency, so that tailor-made interventions can be designed to target the modifiable BCFs and to modify the mediating variable in order to change the outcome. Among the identified BCFs, self-medication and received menstrual education are modifiable. Thus, the nurse could collaborate with both primary and secondary schools to design an educational intervention to educate girls about dysmenorrhea, and to promote their use of self-medication and therefore their self-care behaviors toward dysmenorrhea. Besides, an intervention to improve girls' knowledge and self-care agency, such as promoting their self-concept and knowledge and information-seeking skills, could be effective in changing the outcome.

The strength of this study was the use of a theoretical model to guide the research. Orem’s theory provided insight into how BCFs and self-care agency influence the performance of self-care behaviors. Knowledge generated from this study provides the foundation to identify girls at risk for self-care deficit, the data also indicating the importance of self-care agency and its effect on self-care behaviors. The results also contribute to the theoretical development and confirm the application of Orem's theory in understanding self-care in the Chinese context. As Orem (2001) continues to encourage theory testing research related to BCFs on self-care, more research is recommended to further describe BCFs as well as other potential factors that are associated with self-care behaviors, using qualitative interviews.

This study has some limitations. First, only female secondary students with dysmenorrhea from local schools who could communicate in Cantonese or Chinese were recruited; therefore, it may not be possible to generalize the findings to those who speak English or study in International School. Second, despite the selection of variables and that their operational definitions were considered and justified based on extensive literature review related to menstruation-related or adolescent studies,
there might have been other important variables not selected for this study. This could also be reflected by the fact that there was a 54% variance in self-care behaviors not explained by the path model. Nevertheless, to include too many variables would lead to a lack of focus in the study. Besides, adolescent girls might be reluctant to complete a questionnaire with too many items. However, there are obviously grounds for including these variables in future studies.

Conclusions

Notwithstanding these limitations, the findings provide the foundation for future research and applications. The results provide an initial understanding of self-care behaviors and their associated factors among adolescent girls with dysmenorrhea. Knowledge of the interrelationships of the variables gives us a better understanding of this phenomenon. Although further qualitative study will be needed to support and illuminate these quantitative findings, this is one of the first studies to examine factors affecting self-care behaviors in adolescent girls. Consequently, this study will contribute to clinical application and result in a foundation for future intervention studies to identify important BCFs and promote self-care agency to achieve optimal self-care behaviors in adolescent girls with dysmenorrhea.

Clinical Resource


References


