

Factors influencing the National School Health Policy implementation in Lao PDR: a multi-level case study

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SUMMARY

In the last decade, a National School Health Policy (NSHP) has been formulated in several developing countries following the recommendations of the Global School Health Initiative. However, NSHP implementations across the country have not been fully shared. This study aimed to identify factors that have influenced implementation of the NSHP in Lao People's Democratic Republic (Lao PDR). We conducted key informant interviews with 20 NSHP implementers and document reviews. Data were collected at the national level and at three lower administrative levels (provincial, district and school) in three areas (north, central and south). Study areas were selected according to the history of NSHP interventions. We applied content analysis using 12 key components of successful policy implementation and a policy triangle framework. We found that scaling up to nationwide implementation was limited.

Results showed the NSHP implementation in Lao PDR was influenced by nine interlinked factors, including extensive planning, resource management, monitoring cycle, the perception gap between national and lower administrative officers, national task-force ownership, ongoing coaching of district educational officers, management skills of school principals, priority of school health and decentralization. Furthermore, these nine factors could be integrated into the existing educational system. In conclusion, for sustainable and nationwide implementation of the NSHP in Lao PDR, the following three factors need to be embedded in the educational system: extensive planning with a clear long-term vision at national level, human resource management including well-organized training at each administrative level and a monitoring cycle to understand the real situation at school level.

Key words: school health services; health promotion; school health policy; developing countries

INTRODUCTION

Schools are among the most strategic places to promote health for children (WHO, 2009). In 1995, the Global School Health Initiative was launched by the World Health Organization (WHO) and established the concept of Health-Promoting Schools (HPS). HPS are characterized by a continually evolving environment that fosters healthy living, learning and working (WHO, 1998), and the number of HPS has increased globally. Over the last two decades, school health has shifted from health education in the classroom to a more comprehensive approach focusing on both children's health behavior and a supportive school environment of health promotion (Deschesnes *et al.*, 2003).

Lao People's Democratic Republic (Lao PDR) also experienced this movement toward a comprehensive approach to school health. Lao PDR is a lower middle-income country in Southeast Asia, and various school-based health programs have been implemented there since the 1990s (Phoungkham *et al.*, 2009). Local government implementers for school health programs have recognized the need to incorporate vertical (specific disease or specific service oriented) school-based health programs within a framework of comprehensive school health because they observed that such vertical programs were short-lived rather than sustained (Jimba *et al.*, 2005). Thus, the word 'school health' also refers to a comprehensive school health approach in this study. In addition, the Lao government has prioritized the improvement of the quality of and access to basic education to achieve the Education for All goals by 2015 (Ministry of Education, Lao PDR, 2009). These developments enhanced the coordination between education and health sectors, and with support from donor agencies, the Ministry of Education and Ministry of Health formulated the first National School Health Policy (NSHP) and its accompanying guidelines in 2005.

The NSHP is crucial for school-based health promotion. It provides a common goal and strategy for all schools and other implementers across the country (UNESCO, 2012). The concept of NSHP in Lao PDR refers to a comprehensive school health approach aiming to improve health and educational status of schoolchildren by developing supportive school environments. The NSHP targets primary schools and consists of five components: personal health and life skills, healthy school environment, health and nutrition

services, control and prevention of common diseases and school and community partnership. These components were based on several global concepts such as the WHO's HPS (Ministry of Education and Ministry of Health, Lao PDR, 2005).

The NSHP of Lao PDR has two characteristics: (i) the education sector is taking the lead in its implementation and (ii) school health task forces are required at each administrative level (national, provincial, district and school) and expected to support schools to improve children's health status. Members of each task force consist of representative officers from both education and health sectors at the upper three levels, and the principal and a few teachers at the school level. The NSHP and accompanying guidelines were disseminated nationwide through a cascade approach, and a project and NSHP programs were established in selected areas (see Table 1 for details). In the 7 years since the NSHP was established in 2005, no comprehensive evaluation of

Table 1: Summary of the National School Health Policy interventions in Lao PDR

Province/capital	Intervention
All provinces and a capital	The national task force distributed the policy and accompanying guidelines with a brief orientation to province offices of both education and health sectors, then province offices distributed the guidelines to district offices of both sectors, and district offices distributed to all 'complete' ^a primary schools in each district throughout Lao PDR.
Oudomxay province	The Japan International Cooperation Agency conducted a long-term project for NSHP implementation for 5 years (2005–2009) in Oudomxay and 2 years (2008–2009) in other three provinces.
Vientiane capital	The local government of Vientiane supported by national task force conducted interventions to implement the NSHP using their own budget. Interventions included 1-day training on the implementation of school health policy for selected schools.
Savannakhet province	No interventions focusing on the implementation of NSHP were conducted, though various topic-specific programs have been conducted by donor agencies

^aIn Lao PDR, a 'complete primary school' is defined as a primary school that consists of grades 1–5.

the policy implementation has been conducted in the country, although policy content was reviewed and revised in the second edition of the policy in 2010.

In order to improve the policy process, it is vital to identify the factors that foster or undermine policy implementation (Williams *et al.*, 2004). In the last decade, several developing countries formulated the NSHP following the recommendations of global initiatives, such as Nigeria in 2006 (Federal Ministry of Education, Nigeria, 2006) and Kenya in 2009 (Republic of Kenya, 2011). Although policy implementation would vary depending on the setting, these countries have been facing common challenges in scaling up to nationwide policies and sustaining policy implementation with limited budgets (Oseji and Okolo, 2011; WHO, 2011). However, few studies have focused on NSHP implementation, whereas national policy implementation has been evaluated in various fields of health (Williams *et al.* 2004). A review paper on HPS identified four factors that enhance the implementation of a comprehensive school health approach: systematic planning (including tracking the progress and making adjustments), school/family/community partnerships, political and financial commitment and process evaluation (Deschesnes *et al.*, 2003). Although these findings are meaningful for policy implementation as well, the research target was a comprehensive school health approach, which does not necessarily focus on nationwide implementation. Another study in South Africa revealed issues for successful implementation of the NSHP, which included having a sufficient number of human resources, availability of transportation to schools and further training (Shasha *et al.*, 2011). However, the study target was limited to provincial and district levels. Thus, a limited number of studies has comprehensively covered NSHP implementations at all levels across the country, and this study aimed to identify the factors that influence the implementation of the NSHP at national, provincial, district and school levels in Lao PDR.

METHODS

In this case study, we conducted key informant interviews and document reviews in Lao PDR. Between August and September 2011, we collected data at a national level and at three lower administrative levels (provincial, district and

school) in three areas (north, central and south) (Figure 1).

Study areas

We used a stratified purposeful sampling approach to choose study areas by geographical area and the intensity of implementation. Lao PDR is geographically divided into three areas. We selected one province or capital in each of the three areas according to the history of national school health-policy implementation: (i) Oudomxay province (UDOM) as a project site for NSHP implementation (5 years), (ii) Vientiane capital (VTE) as an intervention site (one-shot) and (iii) Savannakhet province (SVK) as a non-intervention site (Table 1).

Geographically, UDOM (population: 272 050) is located in the north and SVK (population: 842 340) is located in the south of Lao PDR. VTE (population: 711 919) is the capital of Lao PDR (Committee for Planning and Investment, 2007). In each province/capital, we selected one district that had good accessibility to the area. Then we purposively selected two primary schools located in the selected districts, one with good performance and another with limited performance in school health implementations, as indicated by the task-force members at the district level.

Key informant interviews

We conducted 20 key informant interviews with NSHP implementers who belong to the school health task force at each administrative level. In this study, NSHP implementers were defined as (i) a government officer who is working at a school health-related department or a teacher who has responsibility for school health activities at a public school and (ii) an individual who has a significant role in the NSHP implementation process at his or her level. Government officers at each level contributed to selecting the most eligible NSHP implementer at the administrative level below their own.

We used a modified interview guide based on the 'policy-implementation assessment tool for implementers and other stakeholders' by the United States Agency for International Development (USAID). This original interview guide consists of seven dimensions that capture the overall process of health-policy implementation. This guide has been applied in health-policy analysis in several low- and middle-income countries (USAID, 2010). After translating the guide

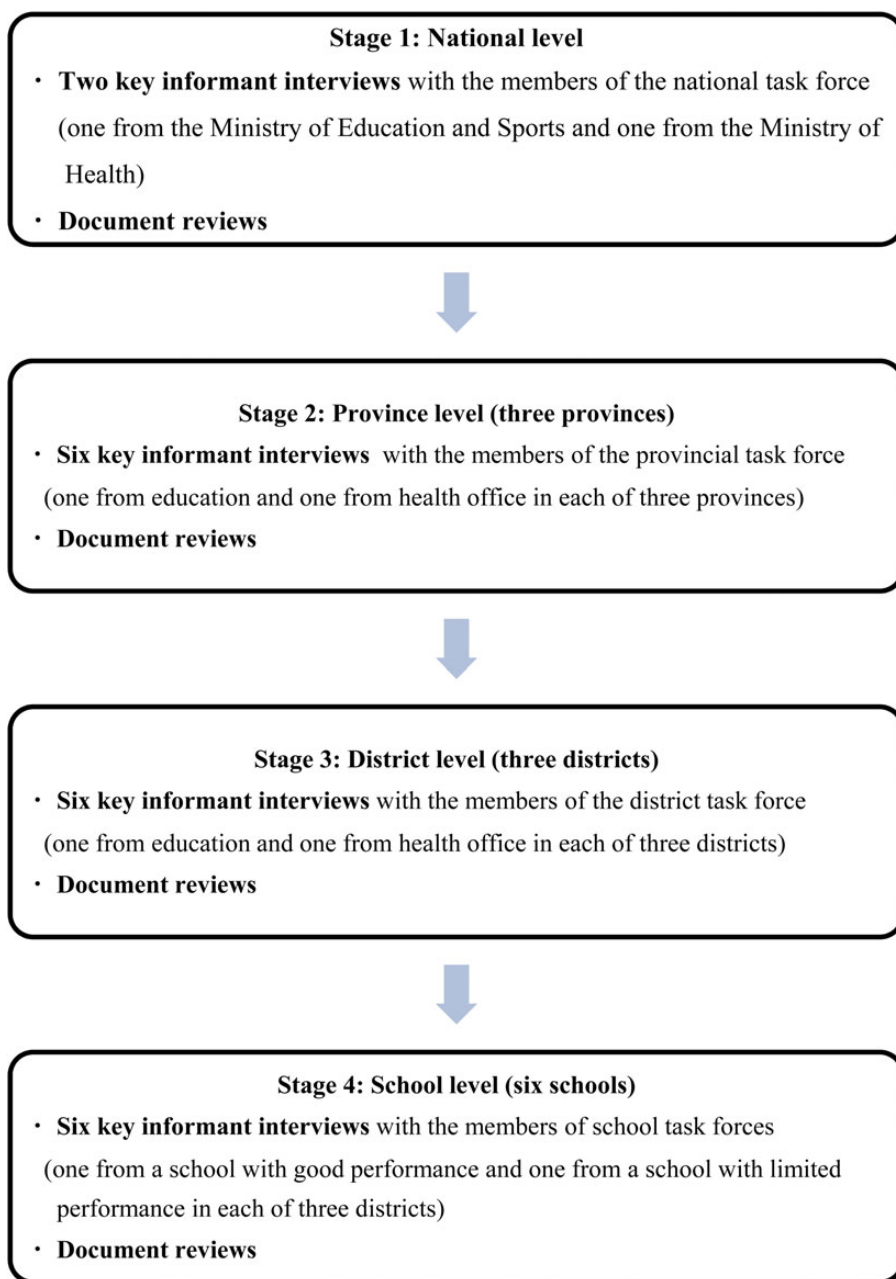


Fig. 1: Data-collection approaches. *Members of task forces consist of representative officers from both health and education sectors at the national, provincial and district level, and the school principal and representative teachers at the school level.

from English to Lao, we discussed the validity of each open-ended question with two national task-force members and five experts from external agencies, one from health and four from the educational sector. Then, we modified the questions

on the basis of their comments and conducted a pilot study.

Three interview teams visited the study areas after attending a 2-day training. Each team consisted of one Laotian interviewer, one interpreter

and two to three researchers from Japan or Thailand. Interviews were conducted in the Lao language, and interview responses were simultaneously interpreted into English. Japanese or Thai researchers could point out problems during the interview if responses were inappropriate for the questions, insufficient or unclear. Each interview took 2–3 h. All responses were transcribed and digitally recorded for backup.

Document reviews

We reviewed documents related to NSHP implementation in Lao PDR. We obtained documents from NSHP implementers at each level and experts from donor agencies on school health and by searching Google and the PubMed database. Reviewed documents include national school health policy and accompanying guidelines, memoranda, conference proceedings, meeting records, project reports, research papers and reports, official reports and annual school plans and newsletters made by NSHP implementers. The period reviewed was from the NSHP development (late 2004 at the earliest) to the time of data collection (September 2011). The documents contained information on issues such as the actors involved in implementation, process of policy implementation, and the setting of policy development and implementation. To ensure the quality of this study, we validated information across sources through personal dialogue with national task force and external experts at a national level from the education and health fields.

Data analysis

We applied content analysis using a framework of 12 key components by Whitman (Whitman, 2009). On the basis of reviews in a wide range of papers on implementation and education reform (Whitman, 2009), this framework was identified as having influential components of successful policy implementation. These 12 components include vision and concept, dedicated time and resources, stakeholder ownership and participation, team training and ongoing coaching, cross-sector collaboration, champions and leaders, data-driven planning and decision-making, administrative and management support, adapting to local concerns, attention to external forces, critical mass and supportive norms and stage of readiness (Whitman, 2009).

First, we categorized the interview responses and document reviews into the 12 components. Then we cross-tabulated the data by areas and levels to identify common patterns among all areas/levels and specific patterns in each area/level. Comparing cases also allowed us to identify the factors that facilitated and impeded the improvement of interventions (Baker, 2011). Based on the cross-tabulated data, we identified nine specific factors. Next, we divided these factors into four policy-making elements that comprise the ‘policy triangle framework’ for health-policy reform and implementation: (i) *content*, (ii) *actors*, (iii) *processes* and (iv) *context* (Walt and Gilson, 1994). This framework enabled an in-depth understanding of the factors of the policy triangle by illustrating how each one is interlinked to the others. A large number of health-policy studies in developing countries have used this framework for policy analysis, including research on policies for maternal health (Bui *et al.*, 2010; Green *et al.*, 2011) and family planning (Lee *et al.*, 1998). To ensure rigor in the analysis, three researchers (J.S., S.T. and T.A.) jointly conducted the analysis, and regular consultations were held with other research members. Furthermore, the preliminary findings were reviewed by some of the key informants to confirm their validity and acceptability.

RESULTS

Nationwide policy implementation was limited in Lao PDR. The beginning phase of the policy-making process was successful, which included agenda setting, policy development and a 5-year pilot project in four provinces (2005–2009). However, the success of this phase was not scaled up to other non-pilot project areas.

When comparing three areas that had different interventions, we found different situations: mostly sustained implementation at UDOM (pilot project area), partly sustained implementation at VTE (local government-supported area), and mostly no implementation at SVK (non-pilot project area). We identified the nine factors below to explain how and why such differences occurred among the study areas.

Policy processes

Extensive planning

National level respondents recognized that a lack of extensive NSHP planning is one of the reasons

for limited scaling up to nationwide implementation. As the national task force could develop extensive plans or a clear long-term vision for nationwide NSHP implementation only when they could obtain additional funding from external donors, strategic NSHP plans were set within the limited funding period.

Resource management

Respondents at all four levels explained that limited human and financial resources were the main reason for insufficient policy implementation in Lao PDR. For human resources, training outcomes were not effectively disseminated or sustained among government officers in VTE. For example, one respondent from a district health office in VTE had never seen the policy document. Two main reasons were expressed in the interviews and document reviews. First, young government officers who attended the training were reluctant to share what they learned with their colleagues because of a cultural belief that knowledge should be disseminated only from senior to junior individuals. Second, there were frequent transfers to different units without handing over task-force duties to the next member. Moreover, the training occurred only once and was not reinforced in VTE, whereas trained officers were continuously followed up during the project in UDOM. For financial resources, the Lao government relied heavily on external funding. The budget for NSHP implementation is available only when school health projects by donor agencies are ongoing. In addition, these projects tended to target disease prevention and did not focus on comprehensive school health approach.

Institutionalized monitoring cycle

An institutionalized monitoring cycle has been identified as a factor that leads to sustainable implementation. In the educational system of Lao PDR, the Ministry of Education and Sports requires province and district educational offices to monitor and report certain issues related to implementation in schools, and these concern only some of the NSHP components, such as health education. This means that government officers do not have a good grasp of the actual NSHP implementation at schools, and the schools cannot receive any feedback from government officers. Integrating school health into the textbooks for three subjects in primary schools was a good achievement by the Ministry of Education

and Sports; however, a lack of NSHP components in the current educational monitoring cycle was considered one of the reasons for limited implementation of NSHP in SVK.

Policy content

The perception gap between national and lower administrative officers

The flexibility of NSHP guidelines was perceived differently between respondents at national and other three levels (provincial, district and school). While national officers recognized them as useful tools because of their flexibility, officers at provincial and district levels and teachers required detailed manuals in addition to the guidelines. The 20-page NSHP guidelines contain general strategies for coordination, implementation, monitoring, evaluation and reporting as well as indicators and a checklist for accreditation. These contents are abstract rather than concrete. District officers thought that they were not sufficient to train teachers. Teachers also argued that they could not obtain both knowledge and technical skills from the limited guideline contents.

Actors

National task-force ownership for scaling up to nationwide implementation

The national task-force's weak ownership of actions to scale up to nationwide implementation was identified as a factor that limited implementation in non-pilot project areas. Since the NSHP was enacted, a national task force has taken a major role in creating a basis of policy implementation, policy dissemination and pilot project management. However, the ownership for the next stage, actions to scale up to nationwide implementation, was weak. Three reasons for this were expressed. First, coordination of external stakeholders at the national level was quite limited. In Lao PDR, most of the school health-related projects were supported by donor agencies and conducted independently by different government officers, such as helminth control by WHO, water and sanitation program by United Nations International Children's Emergency Fund, and school feeding activities by World Food Programme (Tomokawa *et al.*, 2006). The enactment of the NSHP provided a chance for the national task force to integrate these related projects under the NSHP—an umbrella of comprehensive school health—but they did not have ownership

for this. Second, the role of the national task force regarding scaling up actions was not clearly defined in the policy and guidelines. Therefore, extensive plans and strategies for scaling up and sustainable implementation were absent. Finally, the national task force did not receive any technical support for developing these strategies and establishing a sustainable nationwide implementation policy.

Ongoing coaching of district educational officers

Continuous coaching of district educational officers and teachers was an influential factor for sustainable NSHP implementation in schools. During the project in UDOM, developing the capacity of the district educational task force was emphasized because they had a role in monitoring implementation in schools and coaching teachers. From the coaching, teachers acquired not only knowledge and practical skills but also the skills needed to implement sustained practices by themselves. Their practice followed a plan-do-check-adjust cycle: make an annual plan that consists of five policy components (personal health and life skills, healthy school environment, health and nutrition services, control and prevention of common diseases and school and community partnership), set a timeline and responsible person in each component, implement practices, evaluate the implementation using a checklist and make an improved plan for next year. Thus, schools in UDOM were encouraged by district educational officers to implement practices even after the project ended.

Management skills of school principals

The management skills of school principals strongly influenced the NSHP implementation at schools. As most of the financial sources for school health activities are students' parents and community members in Lao PDR, school principals need the skills to persuade the community to be involved in NSHP implementation, and they must conduct effective implementation within budgetary constraints. One school in VTE conducted a project on tooth brushing funded by the school's parent association. In another school in UDOM, the village head helped to get needed fences built around the school by discussing the problem with the landowner and district government officers. Respondents argued that these good practices of community participation depend on school principals' management skills.

Policy context

Priority of school health

Both health and educational respondents in VTE (except for one school respondent) and SVK considered school health a low priority. While all the respondents agreed that school health implementation has a significant benefit for children, they also considered that implementing school health is a good idea but not absolutely necessary. Even task-force members argued that they are busy enough with their regular work, and NSHP implementation could be a burden as additional work. As a reason for low prioritization, one national respondent pointed out an insufficient understanding of the comprehensive school health concept and suggested a need to include the school health concept into the curriculum of teacher training colleges.

Decentralization

A decentralization strategy was identified as a factor that influences the perception gap between the national task force and lower administrative task forces. In 2000, the Prime Minister of Lao PDR issued a decree on decentralization, and the national government has steadily shifted decision-making and financial management powers to the lower administrative offices. Since then, the national task force has recognized that lower administrative officers should have the capacity to implement NSHP by themselves by following the guidelines. However, technical and financial support from the upper offices was not sufficient for lower administrative officers to improve their capacities.

DISCUSSION

This study offers deeper insight of NSHP processes in Lao PDR by identifying nine influential factors affecting policy implementation. Table 2 summarizes the nine factors categorized by administrative levels. For the national level, a key factor was strong ownership for scaling up activities for nationwide implementation after creating a basis of implementation policy. In addition, developing an extensive plan and grasping the actual policy-implementation situation at provincial to school levels were also influential. At provincial and district levels, the perception of school health as a low priority was related to limited implementation. Having effective training

Table 2: Factors influencing the National School Health Policy implementation in Lao PDR by administrative levels

Central level
Ownership of national task force for scaling up to nationwide implementation
Extensive planning
Resource management
Priority of school health
Institutionalized monitoring cycle
The perception gap between national and lower administrative officers
Decentralization
Provincial and district level
Priority of school health
Resource management
Institutionalized monitoring cycle
The perception gap between national and lower administrative officers
Decentralization
School level
Ongoing coaching of district educational officers
Management skills of school principals
Priority of school health
Resource management
Institutionalized monitoring cycle
The perception gap between national and lower administrative officers

and an institutionalized monitoring system were found to be crucial. At the school level, the end point of policy implementation, more practical factors were found to be important in addition to effective training: ongoing coaching of educational district officers and effective management skills of school principals.

The strength of this study was showing which factors were common and specific in each area/level. This strength came from comparing data among all implementation levels from national to school in three areas chosen by the intensity of policy implementation. In addition, we revealed that there was a gap in the perception of national and lower administrative officers and found that this gap also influenced in policy implementation.

The nine factors we identified could be summarized into one component: institutionalization. In the diffusion of innovations model, institutionalization is defined as ‘incorporation of the program into the routines of an organization or broader policy and legislation’ (Oldenburg and Glanz, 2008), and it is regarded as the final stage of diffusion. In this study, we defined institutionalization as ‘integration of NSHP components or implementation factors into the existing educational system as part of its regular task’. We highlight specifically three aspects of institutionalization: *extensive*

planning, human resource management and a monitoring cycle.

Extensive planning

Lack of extensive planning at the national level was one of the reasons for limited scaling up actions for nationwide implementation. As scaling up will not happen automatically (USAID, 2013), a strategic plan, which includes priorities, goals and timelines, is essential when we put policies into practice (Whitman, 2009). Lack of extensive planning at the national level created several challenges for nationwide implementation. For example, it led to vague roles and responsibilities of the national task force, which is unappealing to other Ministry of Education and Sports and Ministry of Health officers, and to weak *ownership of the national task force for scaling up to nationwide implementation*. In the context of scarce funding, governments sometimes have to consider donors’ priorities rather than their own for sustainability (Shiffman, 2007). However, in order to scale up to nationwide implementation, the national task force needs to take a lead to integrate related projects under the umbrella of the NSHP (Tomokawa et al., 2006). Extensive planning helps to establish a clear long-term vision, which is a first step to improving strong ownership.

Human resource management

We revealed poor *human resource management* at lower administrative levels. With regard to effective training, several barriers were pointed out by respondents, such as a limited number of trainees, high turnover of task-force members and failure to hand over task-force duties when members left. These barriers might be common among school health programs in low- and middle-income countries, as Thailand also had the same problem (Waikagul et al., 2005). It is unrealistic to expect that a single person who learned a new concept at a one-shot training can create systemic practice change (Whitman, 2009). In UDOM, government officers and teachers were highly motivated, possibly because multiple staff members could receive repeated training during the project, and they could share NSHP implementations among colleagues. In addition, the training for teachers was followed by ‘ongoing coaching of district educational officers’. These strategies are consistent with previous studies for a sustainable impact of training

over time, such as training multiple people from the same office or school followed by ongoing coaching (Whitman, 2009), training multiple times (Oliveira-Cruz *et al.*, 2003) and developing strategies to enable the officers to conduct training by themselves (Hoelscher *et al.*, 2004).

The training impact was also hampered by a perceived low *priority of school health* among lower government officers and teachers. The respondents raised several reasons for low prioritization, such as a very tight curriculum and limited experience with school-based health promotion. In addition to these reasons, they might perceive that school health does not align with their educational perspectives, which was found to be a main factor in shaping teachers' commitment to health promotion in a previous study (Jourdan *et al.*, 2011). Explaining the general impact of NSHP implementation might not be sufficient to raise the priority of school health among local officers and teachers. A more concrete explanation might be necessary to persuade them that policy implementation contributes to their current mission and practice.

We also suggest the implications for the training content at the school level with regard to *management skills of school principals*. For sustainable NSHP implementation, principals must offer strong leadership and support for teachers, as is often reported in previous research (Whitman, 2009). At the same time, they need the skills to manage the implementation within budgetary constraints, such as those in Lao PDR.

Monitoring cycle

The existence of a *monitoring cycle* was one of the factors distinguishing UDOM from other areas. What are the possible effects of monitoring on sustainable implementation? Monitoring provides intermediary results and leads to mid-course revisions (Whitman and Aldinger, 2009; USAID, 2013) and evidence of progress that is a significant source of motivation for all implementers to sustain their practices (Deschesnes *et al.*, 2003). Based on the results of their monitoring, district educational officers in UDOM continued *ongoing coaching*, and their feedback motivated and encouraged teachers and principals.

Furthermore, institutionalization of a monitoring cycle in educational systems might narrow *the perception gap between national and lower administrative officers*. Monitoring can provide actual information that lower administrative officers

have limited capacities without sufficient training and support, as was the case in SVK. The strategy of *decentralization* also affected the perceptions of national officers that lower officers have more autonomy and responsibility for implementations. Although autonomy of district officers is necessary for the success of interventions (Kamuzora and Gilson, 2007), efforts of national government officers are still needed to grasp the real situation over time through the monitoring.

In summary, nine factors were identified that implied that 'institutionalization' is the key for sustainable NSHP implementations. This implication is consistent with previous findings in Thailand that integration of a school-based de-worming program into the existing system was a key for successful scaling up to non-project areas (Okabayashi *et al.*, 2006). We also found that most of factors were not likely to be responsive to additional budgets alone. Most respondents argued that failure to obtain a greater budget would be one of the major reasons for limited scaling up activities for nationwide NSHP implementation. However, we found that most of the identified factors that influenced on NSHP implementations were non-financial ones. Instead, they were organizational ones, such as planning, management and monitoring.

Furthermore, our analysis provided an additional insight that all factors can be strongly enhanced by understanding the key concept of comprehensive school health approaches: improving health status of students by developing supportive school environments. Among implementers, school health tends to be a lower priority than are other tasks, whereas the content of the NSHP has been widely supported and generally has had few policy conflicts. Because comprehensive school health is a broad concept beyond topic-specific interventions, it does not always show a visible impact in the short run. These characteristics might lead to the implementation gap between policy content and actual actions, such as in VTE and SVK, and require implementers to have the capacity to put the concept into action in their unique context. In other words, for effective school health implementations, implementers need to think and learn proactively about NSHP based on a clear vision of the future (Leger, 1998). Thus, it is essential to cultivate sufficient understanding of the policy concept among implementers at all levels in order to develop a clear vision and the proactive capacity for sustainable NSHP

implementation. For teacher development, not only health topics but also the key concept of comprehensive school health would need to be integrated into the curriculum of teacher training institutions in the future.

Our insights must be considered in the context of two primary limitations. First, donor agencies, children and community members were excluded from the key informant interviews in this study. Although they did not match our definition of policy implementers, they are involved as stakeholders. We analyzed related official documents published by donor agencies, but the contents might not cover all aspects of their perceptions. The responses of children and community members on health activities in schools and communities might also give additional insights. However, we intentionally tried to understand their perceptions from information gained in our interviews of schoolteachers.

Second, the affiliations of the researchers might have created a bias in the information shared by respondents. As the policy development process and pilot project of NSHP implementation in UDOM were strongly supported by the Japan International Cooperation Agency, there was a possibility that some respondents from UDOM would answer to the Japanese researchers positively, particularly for national and UDOM respondents. To counter this potential bias, we formed multi-country interview teams from Lao PDR, Thailand and Japan, and assured the respondents about the anonymity of their responses. Furthermore, interview data were compared with collected documents related to NSHP implementation to confirm the study findings. For future research, additional data from other sources, for data triangulation, such as direct observations by local researchers through visits to schools and attendance of meetings at province and district office (Yin, 2009) would minimize this bias.

Although we have discussed the four elements of policy implementation: policy content, actors, processes and context (Walt and Gilson 1994), policy-implementation outcome was out of scope of this study. Existing evidence shows that the concept of health promoting schools contributed to better health among schoolchildren (Lee et al. 2006). Thus, future research will examine whether and how a national policy adopting a comprehensive school health approach would contribute to outcomes, such as school environments, health and educational outcomes among

students and organizational conditions at government offices.

CONCLUSIONS

This study offered important insights in two ways by identifying nine factors that influence NSHP implementations in Lao PDR. First, we provided evidence that can support efforts to institutionalize the NSHP for sustainable implementation by suggesting three areas of focus: extensive planning with a clear long-term vision at national level, human resource management including well-organized training at each administrative level and a monitoring cycle to understand the real situation at school level. Second, the study highlighted the importance of understanding the key concept among stakeholders at all levels and integrating NSHP into teacher training colleges in the future.

A comprehensive school health approach should not be taken only at school levels. Our findings suggest that several organizational factors influence policy implementation at each administrative level from the national to the schools, and then consequently influence policy-related practices at school level. Therefore, to put the concept of comprehensive school health into sustainable practices at schools, the government should focus more on reorganizing the whole educational system by integrating this approach at each administrative level, rather than just adding it at local school level. This perspective is important beyond Lao PDR, as many low- and middle-income countries are facing challenges in scaling up a comprehensive school health approach to national level. Donor agencies that support the implementation of this approach also need to consider such organizational changes at each administrative level.

ETHICAL CONSIDERATIONS

This study was approved by the Research Ethics Committee of the Graduate School of Medicine at the University of Tokyo, Japan and by the National Ethics Committee for Health Research of the Ministry of Health, Lao PDR. Before the interview, all participants were informed of the purpose and procedure of the study as appropriate. We conducted recordings within the boundaries of confidentiality agreed to at the time of

interviews, and we obtained informed consent from each participant, both for participation and for the recording of interviews. Participants could choose to refuse or discontinue participation at any time.

CONTRIBUTIONS

J.S., S.T. and T.A. performed the analysis and J.S. drafted the manuscript. J.S., N.K., S.T., J.K., M.S. and M.J. participated in the study design and coordination. S.T., D.N., J.W., M.S. and M.J. helped to draft the manuscript. J.S., N.K., S.T. and S.K. collected the data. All authors read and approved the final manuscript.

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