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Original Research

Assessing the validity of health impact assessment predictions regarding a Japanese city's transition to core city status: A monitoring review

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SUMMARY

Background: The validity of health impact assessment (HIA) predictions has not been accurately assessed to date. In recent years, legislative attempts to promote decentralization have been progressing in Japan, and Kurume was designated as a core city in April 2008. An HIA into the transition of Kurume to a core city was conducted before the event, but the recommendations were not accepted by city officials.

Objective: The aim of this study was to examine the validity of predictions made in the HIA on Kurume by conducting a monitoring review into the accuracy of the predictions.

Method: Before Kurume was designated as a core city, the residents completed an online questionnaire and city officials were interviewed. The findings and recommendations were presented to the city administration. One year after the transition, a monitoring review was performed to clarify the accuracy of the HIA predictions by evaluating the correlation between the predictions and reality.

Results: Many of the HIA predictions were found to conflict with reality in Kurume. Prediction validity was evaluated for two groups: residents of Kurume and city officials. For the residents, 17% (2/12 items) of the predictions were found to be compatible, 58% (7/12) were incompatible and 25% (3/12) were difficult to evaluate. For city officials, the analysis was divided into those whose department was directly involved in tasks transferred to them (transfer tasks) and those whose department was not. For the city officials in departments responsible for conducting core city transfer tasks, 33% (3/9 items) of the predictions were found to be compatible, 33% (3/9) were incompatible and 33% (3/9) were difficult to evaluate. However, for the city officials whose responsibilities were unrelated to core city transfer tasks, 11% (1/9) of predictions were found to be compatible, 78% (7/9) were incompatible and 11% (1/9) were difficult to evaluate.

Conclusion: Although it was possible to validate some of the HIA predictions, the results of this monitoring review found substantial discrepancies between the predictions and reality 1 year after the transition of Kurume to a core city. This suggests that the accuracy of HIA predictions may be called into question. However, it should be noted that the review was conducted very soon after the transition and the steering group was very small, which may

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explain why the HIA predictions were inaccurate. Further, long-term studies may be needed to assess the accuracy of HIA predictions in similar contexts.

Introduction

Evaluation of the accuracy of health impact assessment (HIA) predictions can help researchers understand the extent to which policy makers should modify original policies, programmes or projects following recommendations given in an HIA. Very few studies have investigated this issue.[1–4] Before the transition of Kurume to a core city in April 2008, a standard HIA was performed[5–7]; impacts were evaluated, priorities were considered and recommendations were made to policy makers in order to improve service. It is worth noting that when policy makers receive HIA-based advice before the implementation of a policy, programme or project, the outcomes cannot be compared with the HIA recommendations.

Despite popularity in other countries, HIA is not well known in Japan and is rarely used as a basis for policy making. However, the authors decided to conduct an HIA in Kurume as part of the wider project of designating Kurume as a core city.[8] Core cities are cities with a population of at least 300,000 which are permitted a level of autonomy over their administrative areas by the government, who transfer this authority from the prefecture to the city itself.[9–12] Core cities are able to determine their own policies in a number of domains.[12,13] In the case of Kurume, approximately 2000 policy areas were transferred to the jurisdiction of the city itself, including welfare, hygiene, environment, urbanization and education. Residents anticipated that this would bring about the following changes:

- more streamlined government services;
- more integral governmental services;
- higher levels of independent urbanization; and
- a newly energized city.

A core city is able to provide consistent and efficient public health services that are specifically tailored to the needs of its residents. For instance, regarding the promotion of independent urbanization, a core city is able to control outdoor advertisement and implement independent urbanization. With regard to the promotion of energized cities, the city is able to revitalize itself entirely through the management of its own image.

The researchers conducted an HIA in Kurume in March 2008, following the pattern of the European Policy HIA,[6] on the residents and city officials. This clarified that HIAs could also be used in Japan.[8] The HIA predictions only suggested positive outcomes for the residents following transition. However, both positive and negative impacts were predicted for officials, as the challenge of transferring the city to core city status would mainly lie with them, and they would have to find new energy and will to rise to the challenge, while dealing with an increased workload and overtime.

Although the HIA reports and recommendations were submitted to officials in order to maximize the efficiency of the transfer and minimize disadvantage, the city administration did not accept the recommendations of the HIA, which was conducted independently rather than at the request of the city office. As none of the HIA recommendations were implemented in Kurume, the accuracy of the predictions can be assessed by comparison with the actual situation 1 year after transition.

Methods

Box 1 shows the procedures and review methodology that were used in the first HIA in Kurume and the monitoring review.

Before Kurume was designated as a core city, two surveys were conducted. The residents of Kurume were asked to complete an online questionnaire, and face-to-face interviews were held with city officials.

The residents' questionnaire was undertaken between 13 and 18 March 2008.[8] One year after transition, a second residents' questionnaire survey was conducted as part of the monitoring review between 24 and 27 March 2009. Some of the respondent groups were the same for both the HIA and the monitoring review, and some groups only responded to one of the questionnaires. Both of the residents' questionnaires were outsourced to a specialist Internet survey company (Intage Interactive Inc., Tokyo, Japan) and focused on assessing residents' views on the following issues: awareness, expectations and activities of a core city; awareness–expectations and activities of the newly formed healthcare centre; health promotion; exercise habits; health activities of public health nurses; and health activities of interdistrict visiting nurses.

As part of the HIA, city officials in Nagasaki, which had been a core city for several years, were interviewed, as was a core city preparative official in Kurume and other Kurume city officials, most of whom worked in departments that would be directly involved in transfer tasks. The interviews surveyed the officials' opinions in areas including details of transferred authority, benefits and drawbacks of becoming a core city, and anxieties and expectations of becoming a core city.

Between December 2009 and January 2010, a questionnaire assessing the perceptions surrounding becoming a core city was distributed to a number of Kurume city officials with the assistance of the Kurume labour union, after the first phase of the monitoring review had been conducted. The questionnaire examined city officials' opinions on the following issues: existence of core-city-related tasks; proportion of overtime in

Box 1 Procedures and review for health impact assessment (HIA) and monitoring.

Screening

- Determination from governmental policy assessment, interviews and document studies whether Kurume's core city transition issues were subject to an HIA

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Scoping

- HIA is designated and planned (rapid HIA selected to enable the submission of a report by April 2008)
- University researchers made up the steering group (three people)

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Conduct assessment

- Government policy analysis (interview in Nagasaki, a predecessor core city, view of the Mayor of Kurume spoken at its assembly, core city plan, interviews to core city preparation office)
- Community profiling (Kurume population and hygiene statistics, Kurume Public Health Centre Guidebook, Kitano White Paper on Health)
- Compilation of qualitative and quantitative data (survey to the 35 predecessor core cities, surveys targeting residents of core cities, interviews with two of Kurume's public health nurses, document studies)
- HIA (positive and negative aspects separated and certainty of evidence and possible effects were presented)

↓

Report on results

- A report was drafted on the results of surveys on the 35 predecessor core cities and residents regarding core cities, and was ultimately submitted to the city administration with suggestions

↓

Monitoring 1 year later

- On the basis of residents' questionnaire results, interviews with city officials working in departments tasked with core city transfer duties, and results of the city officials' questionnaire 1 year after transition to a core city, the differences between the predictions and reality were evaluated

Second report on results

↓

- The second report on results for departments tasked with core city transfer duties.

the past month; relationship between the number of workers and amount of work; relationship with the new department; and job satisfaction.

The authors had already made predictions about the findings that would emerge from these questionnaires. When the predictions matched the results closely, the relationship between the prediction and reality were labelled 'compatible'; when results were found to differ from the prediction, the relationship was labelled 'incompatible'; and when the nature of the relationship between the prediction and reality could not be assessed accurately because of insufficient data, the relationship was labelled 'difficult to evaluate'.

This research received prior approval from Kurume University Ethics Committee (Research No. 08030).

Results

Results of the HIA and the monitoring review

Results of the residents' questionnaires

Before Kurume was designated as a core city, 1504 questionnaires were distributed to the city residents; 420 valid completed questionnaires were returned, giving a response rate of 27.9%.[8] In the residents' questionnaire conducted 1 year after transition, 1436 questionnaires were issued and 526 completed questionnaires were returned, giving a response rate of 36.6%. For both questionnaires, the ratio of male to female respondents was almost the same; no discrepancies were found between this ratio in any age groups. Respondents in their 30s and 40s represented 60–70% of the respondents.

Before Kurume's transition to a core city, the most common expectation was that the transition would bring increased urban activation (43.2%), followed by more efficient administration services (19.9%), meticulous services (health related) (15.1%) and increased levels of urbanization (10.5%). The percentage of respondents who were in favour of the transition of Kurame to a core city remained at the same level in both the pre- and post-transition questionnaires (70%).

In the HIA survey, respondents believed that the transition would bring urban activation (5.5%), more efficient administration services (6.8%), meticulous services (health related) (6.5%) and urbanization (2.5%). The majority of respondents believed that the new public health centre would lead to improved levels of health promotion (30%). Despite this expectation, the data from the monitoring review revealed that most residents (80%) did not make use of the new public health centre in the year following the city's transition to a core city. Indeed, in the year following transition, only 5–6% of residents had participated in health promotion.

Interviews with city officials

As part of the HIA, city officials in Nagasaki, which had already become a core city, were interviewed. On the basis of their feedback regarding how transition affected health services, the authors believed that transition to a core city would improve public health centres and help develop public health services.[8]

When the monitoring review was conducted 1 year after Kurume's transition to a core city, Kurume city officials in departments with transfer tasks were interviewed in order to assess their opinions about how this transition had affected public health services. They reported that, since the transition, the number of consultations that took place in the average public health centre in Kurume had, in fact, decreased. Consultation corners are one of the cornerstone duties of public health centres. Consultation corners are drop-in health advice facilities that have four sections: general medical practice section; hygiene promotional measures section; disease prevention section; and health promotion section. Each section has two or three teams. For example, the food sanitation team of a hygiene promotional measures section is responsible for problems such as food poisoning; the anti-infectious disease team in a disease prevention section is responsible for infectious diseases. The health promotion team in the health promotion section is responsible for health check-ups for adults and various cancer screening examinations.

Following the transition to core city status, the number of infant development consultations decreased from 77 (fiscal year 2007) to 51 (fiscal year 2008), the number of nutrition consultations decreased from ~1000 (fiscal year 2007) to 507 (fiscal year 2008), and the number of psychiatric health consultations decreased from 2861 (fiscal year 2007) to 2296 (fiscal year 2008). The rate of health check-ups for residents of Kurume decreased from 33% (fiscal year 2007) to 28% (fiscal year 2008). However, two aspects of health care did show improvement following transition: the number of health promotion committees increased from 314 people (seven school districts, fiscal year 2007) to 715 people (21 school districts, fiscal year 2008), and the time between submission of an application of financial assistance for a disabled person or fatherless family and the receipt of a loan decreased from 30 days to 14 days.

In terms of people's opinions on environmental welfare, residents seemed happy with the changes in waste management since the transition of Kurame to a core city; this is probably because core cities are better able to control waste management as they do not need to rely on the prefecture's intervention.

The officials who were working in departments with core city transfer tasks reported that they enjoyed the new challenges offered by the transition, but reported frustration with the increased workload and overtime.

Results of the city officials' questionnaire

Completed questionnaires were received from 46 individuals (34 men and 10 women, two respondents did not disclose their gender). The average age of respondents was 40.7 (range 25–59) years, with an average continuous length of service of 18.5 (range 4–39) years). There were respondents from 14 departments, representing 82% of all departments ($n = 16$). Many officials reported no change in their level of job satisfaction, strengthening collaboration with other positions and links to regional society since the transition of Kurume to a core city. However, the strongest responses from officials who worked in departments with transfer tasks were

regarding job satisfaction, strengthening collaboration with officials in other positions and increased budget.

Validity of the HIA predictions

Tables 1 and 2 show the predictions that were generated by the HIA regarding the expected effects of the transfer to core city status, and the evaluation of the actual state of affairs 1 year after transition.

Residents

For the residents' questionnaire, predictions that were found to be accurate (compatible) included speeding up disability application procedures and improved household sanitation through stray dog control and waste management. Predictions for both were 'positive' for direction and 'definite' for likelihood. The Internet was not used because of the possibility of bias, and the judgement was made based on the results of interviews with city officials. Thus, it was evaluated that the transition had brought about positive effects for residents in terms of service efficiency and quality.

Predictions that were found to be inaccurate (incompatible) were: promoting the use of consultation corners, increased health check-up rate of residents, and improved health maintenance services to individuals and the region by interdistrict visiting nurses. Predictions for promoting the use of consultation corners were 'positive' for direction and 'definite' for likelihood. However, based on the results of interviews with the city officials, no data were received to show an increase in the number of consultations since the transition of Kurume to a core city. Predictions for an increased health check-up rate of residents were found to be 'positive' for direction and 'speculative' for likelihood. However, in reality, the rate of health check-ups for residents decreased from 33% (2007) to 28% (2008). Predictions for improved health maintenance services to individuals and the region by interdistrict visiting nurses were found to be 'positive' for direction and 'speculative' for likelihood. However, the regional system of interdistrict visiting nurses was not implemented in the first year after the transition of Kurume to a core city.

City officials

City officials in departments conducting core city transfer tasks (environmental department, planning and financial department, contract management group, healthcare centre, general affairs office). In areas such as increased overtime and reduced time with family, time required to remember transfer tasks, and organizational enhancement through supplementation of personnel, the predictions made before the transition of Kurume to a core city were found to be accurate (compatible). With regard to increased overtime and reduced time with family, and time required to learn new things due to the increase in workload and overtime, both predictions were found to be 'negative' for direction. Likelihood was 'speculative' for the former and 'definite' for the latter. With regard to increased overtime and reduced family service, 78% of city officials reported that they were currently returning home late. However, much of the overtime was not related directly to core city tasks, although this was not the case for those who worked in the healthcare centres, who reported that much of the overtime was due to core city tasks. These findings indicate that when considering the effects of a city's transition to a core city on those who work in departments which are responsible for the implementation of core city tasks, a longer time between transition and the monitoring review would probably generate more accurate results.

The opinions of city officials regarding the time required to learn transfer tasks was garnered from interviews conducted with officials within the healthcare centre and environmental department. With regard to organizational enhancement through supplementation of personnel, the data were 'positive' for direction and 'definite' for likelihood. Organizational enhancement was 'definite' according to the criteria of increased staff numbers and greater organizational autonomy. Staff numbers increased by 100 after the transition to a core city, and many city officials reported greater autonomy; therefore, the prediction in this regard was accurate.

In many areas, the HIA predictions were not accurate. The incompatible predictions that were made included areas such as enhanced co-ordination with other occupations, increased recognition and increased financial difficulties through reductions in local tax subsidy. Predictions for enhanced co-ordination with other occupations were 'positive' for direction and 'definite' for likelihood. Only 22% of city officials believed that transition to a core city had brought about enhanced co-ordination with other departments. This shows that interdepartmental co-ordination had not been enhanced as a result of the transition, and that this goal should be pursued in future.

In some cases, the relationship between the actual data and the predictions was difficult to evaluate. This was found in various areas, including whether the transfer to core city status had brought new challenges to the work life of officials, promoted greater connection with the local community or increased job satisfaction. While the interviews suggested that most officials did feel that new challenges had come about because of the transition to a core city, only 12.5% of people reported this in the questionnaire. Regarding connection with the local community, interviews with the waste management department suggested that they had developed a connection with the local residents. On the other hand, in the questionnaire, affirmative opinions were only 12.5%.

Officials in departments not directly involved in the core city transfer tasks (council office, education department, citizens department, treasurer, commerce and labour department, general affairs department, city construction department, agricultural policy department, culture and tourism department). The majority of predictions were found to be incompatible with reality in this group. The only compatible item was financial difficulties through reductions in local tax subsidy.

Discussion

Validity of predictions

The validity of predictions made in the HIA proposal was evaluated by comparing the predictions with the results of

Table 1 – Comparison of the health impact assessment results for residents before and after core city designation.

Health determinants	Expected effects	Prediction					Evaluation 1 year later			Basis for judgement
		Direction		Likelihood			C: Compatible I: Incompatible DE: Difficult to evaluate			
		P: Positive N: Negative		D: Definite P: Probable S: Speculative						
		P	N	D	P	S	C	I	DE	
Individual lifestyle	Promotion of consultation corners	○		○				●		No improvement in quantitative data was recognized in interviews with the health and welfare department.
	Speeding up disability application procedures	○		○			●			Application period was shortened (from 4 weeks to 2 weeks). Increased number of acceptances (from twice monthly to three times monthly)
	Increased participation in health promotion	○			○				●	Total number of participants unknown.
	Increased health check-up rate of residents	○				○		●		Decreased from 33% (2007) to 28% (2008) because Japanese health check-up system changed to focus on metabolic syndrome and payment for examination.
	Improved individual and regional health services by interdistrict visiting nurses	○				○		●		Interdistrict visiting nurses did not implement in 2007 and started in 2008. However, the system did not apply well to residents.
Societal and regional effects	Strengthen and enlarge community through health activities	○			○			●		Independent club activities insufficient.
	Complete health services	○			○			●		Until 2007, health activities were not implemented in the regional responsibility system.
	Improved exercise and diet due to stronger health check-up	○				○			●	No materials.
Living and working conditions	Improved household sanitation due to stray dog control and waste control	○		○			●			Waste processing became faster since transition to core city.
	Development of independent city planning	○				○		●		In the questionnaire survey, 10.5% expected independent city planning in the pre-transition questionnaire, but only 7.8% felt it had been achieved 1 year later.
Social, economic, cultural and environmental factors	Efficiency in administrative organization	○			○			●		In the questionnaire survey, 19.9% expected efficiency in the administrative organization in the pre-transition questionnaire, and only 3.4% felt it had been achieved 1 year later.
	Residents use various health services and improve health due to increased recognition of core city and health centres	○		○					●	In the results of the residents' questionnaire survey, while recognition of core city increased (61.6% to 78.1%), awareness of the new health centre was only 38.0%. Understanding of the frequency of use of health services was incomplete.

Table 2 – Comparison of the health impact assessment results for city officials before and after core city transiiton.

Health determinants	Expected effects	Prediction					Evaluation 1 year later			Basis for decision
		Direction		Likelihood			C: Compatible I: Incompatible DE: Difficult to evaluate			
		P: Positive N: Negative		D: Definite P: Probable S: Speculative						
		P	N	D	P	S	C	I	DE	
Individual lifestyle	New challenges	○		○				▲	●	●: Only 12.5% cited in the questionnaire, however, affirmative opinions obtained in the interview. ▲: No opinions from interviews and questionnaire.
Societal and regional effects	Connection with the local community	○			○			▲	●	●: Only 12.5% cited in the questionnaire. However, in the interview with the waste management department, they developed a connection with the local residents. ▲: There was no enhanced co-ordination with other occupations from interviews and questionnaire survey.
	Decreased time with family due to overtime		○			○	●	▲		●: According to the questionnaire, 78% recognized that they were currently returning home late. ▲: 44% cited 'returning home late' and 56% cited 'returning home on time'in the questionnaire.
Living and working conditions	Job satisfaction	○		○					● ▲	●: In the questionnaire, only 12.5% cited 'job satisfaction'. However, in the interview with the healthcare centre and the environmental department, affirmative opinions were obtained. ▲: The questionnaire results showed that 69% said that they were 'satisfied with their job since prior to its designation as a core city'. There was no relationship between 'core city' and 'job satisfaction'.
	Enhanced co–ordination with other occupations	○		○				● ▲		●: Only 22% cited in the questionnaire. ▲: In the questionnaire, 6% cited and 43% cited 'did not enhance co-ordination'.
	Organizational enhancements through supplement of personnel	○		○			●	▲		●: 100 extra staff. ▲: The results of the questionnaire showed that 11% cited and 68% cited 'reductions in personnel'.
	Increased amount of work in overtime		○	○			●	▲		●: Interviews revelaed that work increased in particular at the health centre and the environmental department. ▲: As they did not need to learn a new job, they did not increase their overtime.
Social, economic, cultural and environmental factors	Increased recognition of a core city	○			○			● ▲		●: 12.5% cited in the questionnaire. The remainder believed it was 'unchanged or did not know'. ▲: 24% cited in the questionnaire . The remainder cited 'no change or unknown'.
	Financial difficulties due to decrease in local tax subsidy		○		○		▲	●		●: In the questionnaire, 22% of respondents said that new projects were done to increase budget. 11% said that the projects were not done to reduce budget. ▲: In the questionnaire, 34% said that new projects could not be implemented to reduce budget. 11% said that new projects could be implemented to increase budget.

(●: Department conducting core city transfer tasks, ▲: Department not conducting core city transfer tasks)

a monitoring review that was conducted 1 year after the transition of Kurume to a core city.

There were 12 health impact items predicted for residents; among these, two (17%) predictions were found to be compatible, seven (58%) were incompatible and three (25%) were difficult to evaluate. In other words, only 17% of the predictions about how core city status would affect the health status of the city were found to be valid, and many of the HIA predictions for how residents would be affected by the transfer were found to differ from the actual outcomes.

For the HIA with the city officials working in departments conducting core city transfer tasks, of the nine items, three (33%) predictions were found to be compatible, three (33%) were incompatible and three (33%) were difficult to evaluate; that is, 33% of the predictions were found to be valid. However, for city officials working in departments unrelated to core city transfer tasks, one (11%) prediction was found to be compatible, seven (78%) were incompatible and one (11%) was difficult to evaluate; that is, 11% of the predictions were found to be valid. The overall validity of the predictions was found to differ according to whether or not the department conducted core city transfer tasks.

Causes of low validity

The main factors for the difference between the HIA predictions and the results of the monitoring review for residents and city officials were varied. They included the different access of each group to information. Most residents had limited means to access the relevant information, usually only accessing information via the Internet. Most respondents were aged 30–40 years and thus had access to the Internet; however, the opinions of the elderly were not reflected sufficiently.

Furthermore, with regard to the predictions on the effect of core city transfer on city officials, responses from 35 predecessor core cities were used. the opinions expressed could have been the independent opinions of those completing the survey. This may suggest that the results are not accurate. Moreover, the steering group used to conduct the HIA predictions may have been somewhat biased.

In addition, if the city officials that were surveyed had been divided into two groups (those belonging to departments conducting core city transfer tasks and departments engaged in unrelated tasks) in the original HIA as well as the monitoring review, a more detailed prediction may have been possible. In the city officials' questionnaire, responses were received from 80% of departments; however, there were only 46 respondents, so the opinions may not have been sufficiently reflected. Furthermore, evidence suggests that it takes at least 5 years after transition to a core city for transfer tasks to be smoothly implemented. This may mean that monitoring the validity of the HIA predictions only 1 year after the city had become a core city may have been too soon.

Significance of validity evaluation of HIA

As Fischer[14] has made clear, general policy evaluation can be usefully classified into four areas: programme verification, situation validation, social validation and social choice. However, these evaluation indices are insufficient to complete an in-depth evaluation of an HIA, which includes reference to other specialized fields such as social science and philosophy. In order to evaluate the validity of an HIA, the quality of the HIA must be considered, and can be assessed using several standards. The first standard is the usefulness of the HIA process, in terms of whether it influenced or aided policy decisions. The second standard is the accuracy of predictions, and the third standard relates to the HIA process itself, in terms of whether stakeholders interacted appropriately and in a timely fashion with the HIA.[15]

Veerman *et al.*[16] reported that HIAs that are more quantitative tend to provide more reliable and valid results. However, there is no agreed definition for how to assess the validity of HIA predictions; some scholars have proposed dividing validity into three types (formal validity, plausibility and predictive validity). The first two types have been generally established but the validity of the latter is difficult to establish. The reasons for this include discrepancies in time, size of the problem, lack of data, sensitivity of the index and the fact that the predictions may influence later events. In other words, with regard to validity of the predictions, proposals are implemented and predictions change; therefore, it is difficult to evaluate the validity of the predictions.

However, in this case, the HIA recommendations did not influence the project as the recommendations were rejected. This allowed the authors to assess the validity of the predictions. Furthermore, Veerman *et al.*[16] proposed the creation of an independent checklist to increase the validity of HIA predictions. This checklist corresponds to the third HIA standard outlined above. According to this checklist, the accuracy of HIA is ensured by increasing the reliability and validity of predictions. Although this study makes it possible to evaluate the validity of HIA, it does not satisfy the first standard in that the proposals were not quoted; therefore, the quality of the HIA was far from satisfactory.

Future development

When evaluating the residents, only a few of the predictions were found to be accurate; the review found that no change of any significance had occurred in the lives of the residents. By promoting healthcare centres to increase residents' awareness of the implications of the transition, and by ensuring active involvement of the administration in the lives of residents through the establishment of public health nurse activities with interdistrict visiting, it is proposed that many of the HIA predictions will be fulfilled at a later date.

In order to assess this, the authors intend to conduct another monitoring review 5 years after the transition, once the transfer tasks are stable. Moving ahead, it is clear that for HIA to be used in decision making and monitoring of policies and projects in Japan, the validity and accuracy of the predictions must be improved. To ensure this occurs, a checklist should be created for the fulfilment of HIA quality standards, and a verification process needs to be conducted.

Conclusion

Although it was possible to validate some of the HIA predictions, the results of the monitoring review indicated substantial discrepancies between predictions and reality 1 year after transition. This suggests that the accuracy of HIA predictions may be called into question. However, it should be noted that the review was conducted very soon after the transition and the steering group was very small, which may explain why the HIA predictions were inaccurate.

Further, a long-term study may be needed to assess the accuracy of HIA predictions in similar contexts.

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Ethical approval

This research received prior approval from Kurume University Ethics Committee (Research No. 08030).

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Competing interests

None declared.

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