

Development and evaluation of the 'Medical Advice for Sick-reported Students Primary School' (MASS-PS) intervention

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Esther Karen Pijl

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Primary School’ (MASS-PS) intervention**

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Proefschrift

Ter verkrijging van de graad van doctor
aan de Universiteit Maastricht,
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“As Granny Weatherwax once said, if you wanted to walk around with your head in the air, then you needed to have both feet on the ground.”

– Terry Pratchett in Wintersmith

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CHAPTER

1

General introduction and
outline of the thesis



School attendance is crucial for children's long-term health because education supports the development of knowledge, practical skills and social skills. [1,2] Attending school leads to a higher educational achievement, better job prospects and healthier behaviour throughout life. [3-6] Moreover, a higher educational achievement has an intergenerational effect as it can lead to a higher socioeconomic position as an adult, which in turn has been shown to positively impact the development, educational achievement and health of one's own children. [7-8] Missing school, i.e. 'school absenteeism', has the opposite effect: it can lead to lower educational achievement, school drop-out and emotional, behavioural and medical problems. [4,5,9,10] School absenteeism may be caused by underlying emotional, behavioural and medical problems. [5,11-13] Because of the long-term impact on health and well-being, school absenteeism is not just an educational problem, but also a public health problem.

The most common type of school absenteeism is sickness absence, defined as absence when a child is reported sick, for example due to an infectious disease or injury. [14,15] Sick reporting can take place in the absence of physical pathology as well; the context can be psychological or social problems instead, such as anxiety, depression, bullying and parental separation. Usually, children are only reported sick for one or two days in a school year due to a temporary illness, and this need not be concerning. [14,15] However, some children miss school frequently and/or for longer periods, and they are likely at risk of the negative consequences of absenteeism. Their sickness absence may also be a sign of underlying problems.

Data on the duration and possible causes of sickness absence are lacking as sickness absence has been understudied, especially in primary education. The literature prefers to focus on unauthorised absenteeism, such as truancy, and secondary education. [4,10,16,17] One explanation is that the negative consequences of truancy are more visible in secondary education than in primary education. However, it is important to study sickness absence in primary education because the underlying problems and negative consequences can have lifetime effects.

Research has shown that absenteeism patterns leading to school drop-out in secondary education can start in primary education, which suggests that the underlying problems may also have begun in primary school. [18,19] A study by Vanneste et al. showed that 13% of pupils in one Dutch school had what was considered extensive sickness absence, i.e. more than nine days or more than four periods. [20] These pupils had more problems at home, such as poverty and difficulty with school motivation, than their peers. Addressing sickness absence in primary education could provide early opportunities to improve children's long-term health and well-being.

Currently, it is unclear how to best address sickness absence problems in primary education. While the Dutch government expects schools to register absenteeism and to have an absenteeism protocol, there are no guidelines for tackling sickness absence, let alone extensive sickness absence. [21,22] The aim of this thesis is to develop, implement and evaluate an intervention to address sickness absence among primary school pupils.

The organisation of primary education and child and youth healthcare in the Netherlands

To address sickness absence in primary schools, two institutions are important: primary education and the child and youth healthcare services.

Primary education in the Netherlands starts at the age of four and generally lasts for eight years. After the eight years, children go on to secondary education. School attendance becomes compulsory from five years of age for all children. [22,23] Dutch primary schools have an average of 210 pupils, although the size can depend on the 'pupil density' of an area, and it is possible for a school to have only 23 pupils if it is the only public school within a 10 km radius. [24] The Netherlands has a segregated education system, meaning that pupils with special needs attend a variety of special schools. The vast majority of pupils in the Netherlands, over 95%, attend regular schools. These 'regular education' schools are segregated into mainstream schools and 'special schools for primary education'. [25] The latter provides additional support for mild learning difficulties, behavioural problems and parenting problems. Children who require more support than is feasible in regular education attend special needs education schools, these children may have disabilities, severe chronic illness or severe learning and behavioural problems. [26] Efforts are being made to move towards more inclusive education with legislation such as the appropriate education law and the varia-law that allow for more tailored education trajectories in regular education. [22,25]

The second institution, the *Child and Youth Healthcare Services* (CYHS), comprises a national public health service with physicians, nurse practitioners, nurses and doctor's assistants offering preventive healthcare to all children between 0 and 18 years old in the Netherlands. [27] Over 95% of children in the Netherlands attend CYHS consultations in the first four years of their life, after which the frequency of these standard consultations diminishes. [28,29] The CYHS professionals work with children and parents, as well as with the wide network of other professionals around the child, including school professionals and healthcare professionals. [30] The aim of

CYHS is to optimise children's development and identify and diminish health threats, such as congenital heart disease, vision and hearing problems, adverse childhood events, infectious diseases, and school absenteeism. [30] CYHS focusses on the early detection of possible problems with the aim of normalisation and early treatment. One of the possible problems CYHS is meant to address is school absenteeism, but this is a fairly recent development. [27,29]

Lessons learned: Past actions for school attendance and dealing with occupational sickness absence

School attendance: 150 years of attention

School attendance has been considered important for over 150 years. At first, in the 19th century, just after industrialisation, the reason to improve attendance was filling the need for educated workers. Originally, the approach to improving school attendance was through legislation, as many industrialised countries, including the Netherlands, prohibited child labour and made school attendance mandatory around the early 1900s. [22,31–33] There was even a brief focus on sickness absence as schools struggled with infectious diseases, and many European cities appointed school doctors to improve hygiene. [34]

From the middle of the 20th century onwards, the view on school absenteeism gradually changed, focussing more on underlying psychological problems or educational needs as the cause of unauthorised absenteeism. Educational adjustments and psychological treatments started to emerge, addressing problems such as child anxiety and school refusal. [33,35] In the year 2000 the European Union passed a resolution to reduce school absenteeism in an effort to reduce school drop-out, with a main focus on managing unauthorised absenteeism. [36] Among other measures, the Netherlands appointed school attendance officers to uphold the mandatory school attendance law. [37]

More recently, research suggests that punishment can actually increase absenteeism and is disproportionately applied to disadvantaged students, who are penalised harder than their peers, thus increasing inequality. [38,39] Therefore, research and policy are shifting to a more care-focussed approach, and the problem has now been reframed: from reducing unauthorised school absenteeism to improving school attendance. [40] Improving school attendance requires more than educational and judicial measures to tackle truancy. Attention for authorised absenteeism such as sickness absence, is also necessary which might not have been regarded as problematic before because it is labelled as authorised absenteeism. [20] Sickness absence in schools has

occasionally been a topic of medical research, although not as a problem in and of itself, but rather to show how a disease affects a child's daily life through absenteeism or how epidemics of infectious diseases may be predicted through sickness absence data. [5,41–43]

From the past attention paid to school absenteeism, the main lesson learned is that to improve attendance, more is needed than punishment of unauthorised absenteeism. It requires actions for all types of absenteeism, including sickness absence.

Occupational sickness absence: a parallel phenomenon

There has been a long and strong tradition in public health of addressing sickness absence among the workforce and these experiences can be helpful when addressing school sickness absence. Occupational physicians appeared as early as 1928 in the Netherlands to address sickness absence by improving hygiene and labour conditions. From the 1950s onwards, occupational medicine incorporated a broad medical view, using the bio-psychosocial perspective, to encourage return-to-work. [44–46]. Research now encourages collaboration between employees, employers and occupational physicians and ensuring that jobs are appropriate for the employee. [46]

From the past attention paid to sickness absence among the workforce, the main lessons learned are: the need for incorporating a broad medical perspective and focussing on collaboration to improve attendance.

Addressing sickness absence with Medical Advice for Sick-reported Students (MASS)

In the Netherlands, attention to sickness absence among children from a public health perspective has been growing since the early 2000s as child and youth healthcare physicians (CYHP), along with school professionals and school attendance officers, began to see sickness absence as a problem. [47] In 2015 the 'Medical Advice for Sick-reported Students' (MASS) intervention was presented to address sickness absence among secondary education students. [48] MASS and the increased attention to sickness absence among students in the Netherlands led to an adjustment of the Public Health Act to include addressing school absenteeism as a task for the Child and Youth Healthcare Services (CYHS). [27]

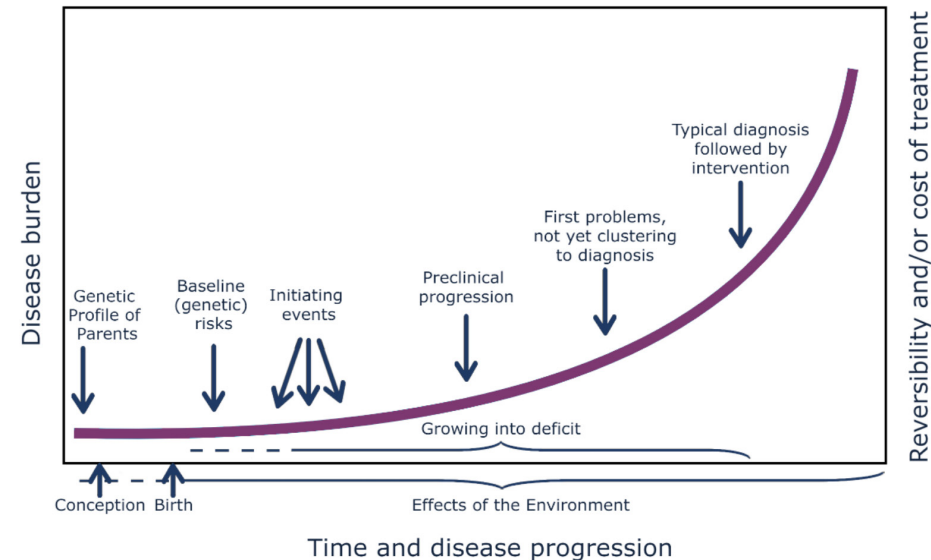
MASS aims to improve school attendance and child well-being and is the only intervention that has been shown to be effective in reducing sickness absence. [48] It

1 focusses on care rather than control and encourages collaboration between education and public health with set tasks for school professionals, parents, students and CYHP. Vanneste et al. created the MASS intervention for secondary education, and it was later adjusted for vocational education. [20,49] However, it might also be valuable for primary education.

Two theories and a framework to understand and address sickness absence

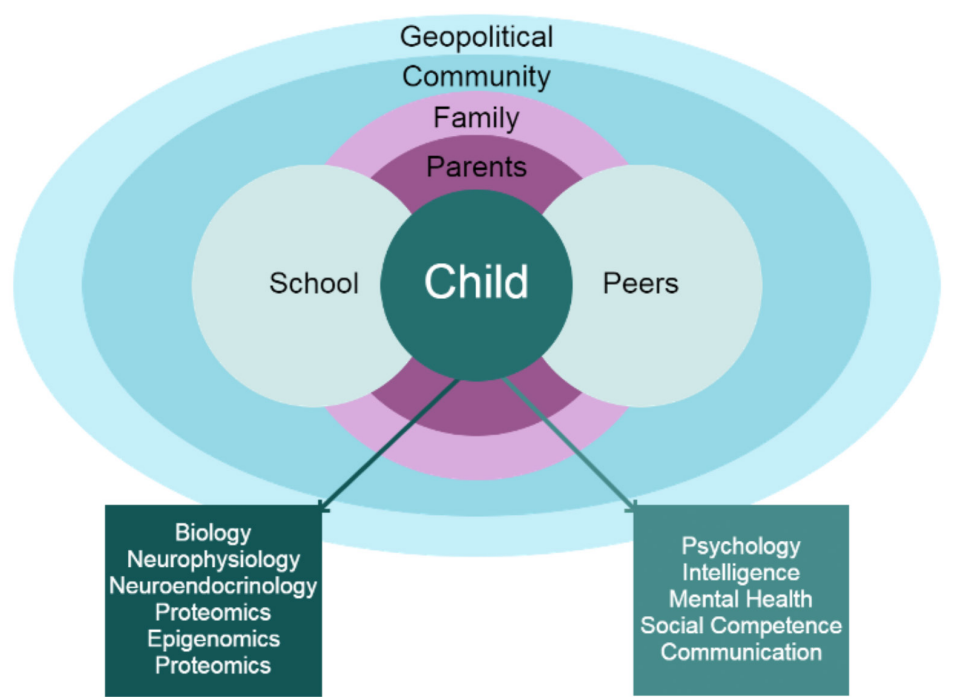
Two theories are useful to understand why early attention to sickness absence is important in the MASS-approach: the growing-into-deficit theory and the biopsychosocial-ecological theory. The *growing-into-deficit theory* describes how different life events can trigger problems, and eventually, different problems might cluster into a diagnosable disease, after which treatment is initiated. [20,50,51] However, the growing-into-deficit theory assumes that it is neither necessary nor beneficial to wait for a diagnosis, especially as each problem comes with its own burden of disease. Instead, problems should be seen as red flags and should be addressed in an early stage to prevent progression of the disease and to improve the child's well-being. Sickness absence can be regarded as a sign of an emerging problem, and therefore, according to this theory, early intervention is warranted.

Figure 1. Growing-into-deficit Model.



1 The *biopsychosocial-ecological theory* describes a broad perspective on health by including biological, mental, social and environmental aspects. [52] The theory suggests that disease is not only caused by physical problems, rather each of the different aspects is important, impacting health either directly or through interaction with other aspects. Therefore, it is necessary to take all these aspects into account when assessing and improving health. [53] This helps us to understand better how sickness absence may be caused by a wide variety of underlying problems, even though 'sickness' may suggest a more physical cause. The biopsychosocial-ecological perspective emphasises the need to examine the physical, mental, social and environmental aspects of sickness absence.

Figure 2. The biopsychosocial-ecological theory.

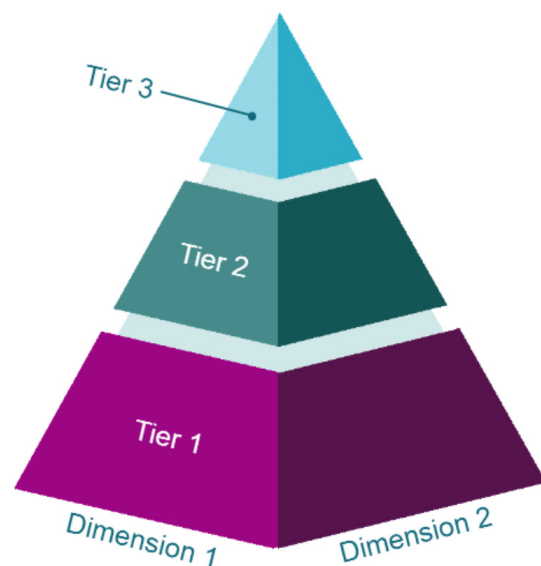


In addition to the two theories, there is an international framework that helps us to understand how school absenteeism can be addressed. This 'multidimensional, multi-tiered system of supports' framework by Kearney and Graczyk is designed to help structure an approach to attendance problems at schools. [54,55] It uses different dimensions to illustrate the need to include the various aspects that influence school attendance and different tiers for students who require different levels of action.

Tier 1 includes all students and collective, school-wide actions to promote a culture of attendance and prevent absenteeism. Tier 2 requires actions for a target group of students showing emerging school absenteeism problems, and Tier 3 requires specialised action for those students with the most severe attendance problems. Both Tier 2 and 3 students might require individual, tailor-made trajectories. [55]

The MASS intervention in secondary and vocational education operates within this framework. In line with Tier 1, MASS starts collectively, using attendance data and paying attention to children who miss school, in a caring manner, not aiming for control. When needed, individual trajectories based on the child's needs are initiated in Tier 2 and occasionally Tier 3. For example, when a child is reported sick frequently or for a long time, the CYHP can help interpret the problems, can confer with medical specialists and create a comprehensive plan to improve attendance, together with the child, parents and the school. [48]

Figure 3. The multidimensional, multi-tiered system of supports framework.



Lessons learned from MASS to address sickness absence in primary education

It seems likely that the MASS intervention could function as a foundation for designing an appropriate approach to sickness absence for primary education. For example by incorporating key features of MASS such as collaboration, collective and tailor-made actions, and medical advice. However, MASS might require substantial adjustments

to the needs and challenges of the new context: pupils in primary schools. [56,57] Firstly, primary school pupils are younger and thus more dependent on parents and teachers than students in secondary education. This is relevant because parents have a much larger part to play in the decision to report their child as sick, compared to secondary and vocational education. Secondly, the underlying problems causing sickness absence may differ from those of secondary education students. Thirdly, the organisational structure of primary schools is very different to that of secondary schools. Dutch primary schools are often much smaller and located closer to the child's home, and only have one or two teachers per class, compared to the larger secondary schools with different teachers for each subject. [58,59] The development of a MASS intervention for primary schools requires a systematic approach and is studied in this thesis.

Development of an intervention: Intervention mapping

A systematic guide to develop an intervention to address sickness absence among primary school pupils is the intervention mapping (IM) method. [57] IM incorporates empirical, theoretical and practical knowledge to design, implement and evaluate an intervention for health promotion in six steps. Step 1 encourages a needs assessment and examination of the problem; in step 2 the change objectives are formulated; in step 3 practical strategies are planned; in step 4 support materials are created; in step 5 the implementation is planned; and in step 6 the evaluation is planned. With these steps IM guides the development of a new intervention, or adaptation of an existing intervention, and it will be used systematically in our studies to develop, implement and evaluate a MASS for primary school: MASS-PS.

Design and study population

A variety of data sets were used for this study. The absenteeism registry of primary schools between 2015 and 2020 in the West-Brabant and South Limburg regions in the Netherlands was used with data of over 5.000 pupils. For the qualitative research in this thesis, the views of 27 stakeholders from the regions of Amsterdam and West-Brabant in the Netherlands were collected in six semi-structured focus group interviews. Data was collected from a further six semi-structured focus group interviews with three to six school attendance coordinators each, as well as from a logbook of over 200 individual interviews with school attendance coordinators.

Thesis aim and outline

The aim of this thesis was to develop, implement and evaluate an intervention to address sickness absence among primary school pupils. The thesis is divided into two parts: the development of MASS-PS (Part 1) and the evaluation of MASS-PS (Part 2).

Part 1: The development of MASS-PS

To gain more insight into sickness absence in primary schools in the Netherlands and how sickness absence relates to other types of absenteeism, **Chapter 2** examines the prevalence of different types of absenteeism among primary school pupils. This chapter includes an overview of all registered instances of absenteeism in the primary schools participating in the study during one school year.

Stakeholders' views on sickness absence in primary education are described in **Chapter 3**. Parents, school professionals, CYHS professionals and school attendance officers were asked about their experiences and needs in focus group interviews, and the findings were analysed with thematic analyses. The aim for Chapter 3 was to gain insight into the background of sickness absence and the current best practices in addressing sickness absence and possible needs for improvement.

To address sickness absence in primary education, **Chapter 4** presents the continuation of step 1 through to step 4 of the intervention mapping approach to develop the intervention MASS-PS based on the input from the stakeholders, along with a literature review and knowledge of the MASS intervention. MASS was systematically adapted to primary education using the first four steps of IM, thus creating MASS-PS (MASS for primary school).

Part 2: Implementation and evaluation of MASS-PS

The process evaluation of MASS-PS is described in **Chapter 5** with a focus on implementation and reflects step 5 of IM. Different aspects of using MASS-PS are highlighted: the intervention itself, the user, the organisation and the sociopolitical context. The aim was to provide insight into the usability of the newly designed MASS-PS and suggest possible improvements.

In **Chapter 6** the effect of MASS-PS on registered sickness absence is examined, representing step 6 of IM. The aim of this study was to evaluate the effectiveness of MASS-PS on the registered sickness absence frequency and duration among primary school pupils.

The findings of all the previous chapters are considered in the general discussion in **Chapter 7**. This chapter includes reflections on the implications for practice and recommendations for further research.

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PART I

The development of MASS-PS

CHAPTER

2

The prevalence of sickness absence
among primary school pupils –
Reason to be worried?

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Abstract

Background

Absence from school can lead to lower educational achievement and poor health. Little is known about school absence in primary education. This study's first aim was to examine the prevalence of school absence in primary schools and differing types of absence, including sickness absence. The second aim was to determine which pupil characteristics and types of absence were associated with extensive sickness absence.

Methods

The school absence registries for the school year 2015-2016 were analysed retrospectively in eight mainstream primary schools with 2216 pupils, and six schools for special primary education with 1000 pupils in the West-Brabant region of the Netherlands. Descriptive analyses, χ^2 -tests, Mann-Whitney U tests and logistic regression analyses were performed.

Results

The one-year prevalence of school absence was 85% in mainstream primary schools and 79% in special schools. Sickness absence was the most prevalent type of absence, occurring in 75% and 71% of pupils, respectively. The prevalence of extensive sickness absence was 13% and 23%, respectively. In mainstream schools, extensive sickness absence was associated with a young age, low parental educational level, more doctor's visits and unauthorised absence, and in special schools with more doctor's visits, other authorised absence, tardiness and unauthorised absence.

Conclusions

The prevalence of extensive sickness absence was high, and as this was associated with other types of absence, these pupils missed even more days of school. Public health research, policy and practice should address sickness absence among primary school pupils, to prevent adverse effects on children's development.

Introduction

Absence from school is an important public health issue as it can lead to lower educational achievement, social difficulties, risk behaviour, school dropout, and ultimately, poor health. [1-8] School absence can be caused by underlying problems of both medical and social origin. It has been associated with chronic illness, psychiatric problems, bullying, child abuse, poverty, low parental educational levels and school-related problems. [9-20] Although research often focuses on secondary education, absence from school in primary education impacts educational achievement negatively and the habit of missing school can start during primary education. [7,8,10,21-23] The prevalence of school absenteeism in primary education is unclear. Previous studies have examined varying types of absence (often unauthorised absence or truancy), and have used varying subpopulations (e.g. chronically ill pupils), differing methods of measurement (e.g. mean or median days or absence rates), and differing thresholds to define problematic absence. Depending on the threshold used (varying from 2-20 days), reported percentages of problematic absence in primary education lie between 3% and 48%. [10,24,25]

This study's first aim is to explore the prevalence of school absence in regular primary education. This exploration was done in the Netherlands where children attend either regular primary education (approximately 95% of children) or special needs education. [26] There are two types of regular primary education: a mainstream primary school (MPS), and a special school for primary education (SSPE). The latter provides additional support for mild learning difficulties, behavioural problems and parenting problems. Special needs education is for pupils with chronic illness, disabilities or severe learning and behavioural problems. Both MPS and SSPE were included in this study, special needs education schools were not.

Dutch legislation differentiates between unauthorised absence (e.g. truancy) and authorised absence (e.g. absence due to sickness). In the Netherlands, unauthorised absence is overseen by school attendance officers who can use penalties to enforce the law. However, sickness absence is not addressed systematically, even though this is the most common type of absence in Dutch secondary education. [27,28] The situation is hypothesized to be similar in primary education. Pupils who are extensively reported sick (more than nine days or more than four periods in a school year) are likely to be at risk of the negative consequences of absence, as they miss a substantial number of lessons and peer contact. [29] It is important to identify these pupils, so this study's second aim is to gain insight into the characteristics of pupils who are extensively absent due to sickness.

This study examines two research questions.

- What is the prevalence of school absenteeism in regular primary education?
- How are pupil characteristics and other types of absence related to extensive sickness absence?

Methods

Primary Schools

The schools included in the present study were participating in a research project exploring school absence in primary education in the West-Brabant region of the Netherlands. The number of schools approached was based on a power analysis carried out for another study in that research project, for which 10 MPSs were needed. Regular education schools were included in this study. Special needs schools were excluded as these are intended for pupils with severe physical or psychiatric problems, which could seriously influence attendance patterns. [30] A random sample of 16 out of 265 MPSs in the region was selected using a random sample of cases procedure in SPSS. Ten of these schools agreed to participate, eight of which were able to provide data on absence. Seven of the MPSs also provided data on pupil characteristics. All seven SSPEs in the region were asked to participate in the study, six of which agreed to participate and provide all data.

The eight participating MPSs had a total of 2216 pupils at the end of the school year. Three SSPEs did not supply the total number of pupils at the end of the year meaning that the total number of pupils in these three SSPEs at the end of the school year had to be estimated. This was done by taking the official total number of pupils in October 2015 and adding the average increase in pupils (9%) found in the other three SSPEs. This resulted in 24 additional pupils bringing the total estimated number of pupils in the six SSPEs to 1000.

The median age of pupils in the eight MPSs was 7.4 years. In the municipalities where the eight MPSs were located, 50% of pupils were boys. The median age of SSPE pupils was 9.4 years and 64% were boys. [26,31]

Measures

The participating schools used a digital school absence registry to record each pupil's absence daily. The school year 2015-2016 was analysed retrospectively. The school absence registry only contained those pupils recorded as absent, meaning that the number of pupils who were not absent in the chosen school year was not recorded. In order to determine the one-year prevalence of absence, the total number of pupils

attending the school at the end of the school year was used.

Three types of authorised and two types of unauthorised absence were categorised: authorised comprised *sickness absence*, *doctor's visits* and *other authorised absence* (such as family holidays or events requiring approval from the principal); unauthorised comprised *tardiness* and all *other unauthorised absence*, e.g. truancy.

When reported sick, pupils were labelled as sick either *occasionally* or *extensively* based on the definition of extensive sickness absence by Vanneste et al. of more than nine school days or more than four periods in a school year. [29] A period of absence is a single continuous span of time during which a pupil is absent. As soon as a pupil is registered as back in school, this period ends.

The frequency and duration (in half days) of all types of sickness absence, other authorised absence and other unauthorised absence were analysed. Additionally, the absence rate each of these absence types was determined, based on an estimated total of 180 possible school days in a school year. The absence rate is the ratio of absence days to possible school days. The duration of doctors' visits and tardiness is not recorded by schools, therefore, only the frequency of these types of absence was analysed.

The month and year of birth, sex, years, and parental educational score of MPS pupils were collected from the school absence registry. Only the sex and the date of birth of pupils were available from SSPEs. Age was calculated at the end of the school year based on the pupil's month and year of birth.

For *years* MPS groups were made by combining lower years (Dutch school years one and two when pupils are normally four or five years-old), middle years (three, four and five) and senior years (six, seven and eight). Several schools had combination classes with different years in one class. These were allocated to the group of the highest year in each combination class.

The *parental educational score* was based on the parents' highest educational achievement. [32] It was converted into a binary variable: category zero for parents with an education up to, or the equivalent of, prevocational education in the Netherlands, and category one for parents with a higher educational achievement than prevocational education.

Analysis

Due to the variation in selection methods, data from MPSs and SSPEs were analysed

separately. χ^2 and Mann-Whitney U tests were used to analyse differences in occurrence of absence in MPSs and SSPEs. Univariate and multiple logistic regression analyses were used to determine the association between extensive sickness absence and (i) pupil characteristics (ii) other types of absence, and compared with occasional sickness absence.

The data were structured hierarchically, with pupils (first level) nested within schools (second level). In order to test if it was necessary to control for school effect in the analyses, the intra-class correlation coefficient (ICC) was determined. [33,34] The ICCs for sickness absence ranged from .02 for MPSs to .07 for SSPEs, thus less than 8% of the variation in sickness absence in this sample was due to differences between schools, indicating that controlling for school effects was unnecessary.

Results

Study population

In MPSs 50% of pupils recorded in the absence registry were male, in SSPEs this was 64%. The mean age of pupils in SSPEs recorded in the absence registry was significantly higher than in MPSs (Median SSPEs: 9.64, MPSs: 7.95, Mann-Whitney test: $U=774.774.5$, $p \leq .001$). Each MPS group (lower, middle and senior) contained approximately 33% of the pupils. A low parental educational score was found in 6% of MPS pupils. Concerning school size, the MPSs had an average of 277 pupils and the SSPEs an average of 167 pupils.

Prevalence of school absenteeism

Of the 2216 pupils in MPSs, 85.70% (1877) were recorded as absent in the school year 2015-2016 (Figure 1). In SSPEs 79.10% of the pupils (791) were recorded as absent. Sickness absence was the most frequently found (Table 1). In MPSs, 75.04% of pupils (1663) were reported sick at least once. Records showed that these pupils had a median of two periods of sickness (maximum of 31 periods), and three days (maximum of 45 days) in the school year. In SSPEs, 70.80% of pupils (708) were reported sick at least once during the year, with a median of three periods and four days of sickness absence (maximum: 28 periods and 80 days). Extensive sickness absence was recorded in 13.13% of MPS pupils and 22.50% of SSPE pupils. Unauthorised absence was the least prevalent type of absence. Other than tardiness, unauthorised absence was recorded in 1.81% of MPS pupils and 8.00% of SSPE pupils. The frequency and duration of types of school absence are shown in Table 2. Focusing on absence rates, the total absence rate in MPSs was 2.15% and the sickness absence rate was 1.80%. The rate of other authorised absence was 0.34% and that

of other unauthorised absence was 0.01%. In SSPEs the absence rates were 2.85%, 2.45%, 0.31% and 0.09%, respectively.

When comparing sickness absence in SSPEs with MPSs, SSPE pupils were reported sick significantly more often (median SSPEs: 3, MPSs: 2, Mann-Whitney test: $U=696.175,500$, $p \leq .001$), and for longer (median SSPEs: 4, MPSs: 3, Mann-Whitney test: $U=701.361,500$, $p \leq .001$) than MPS pupils. The rate of extensive sickness absence was significantly higher in SSPEs than in MPSs ($\chi^2(1)=59.483$, $p < .001$).

Factors associated with Extensive sickness absence

Table 3 shows the results of both univariate and multivariate logistic regression analyses. Only the variables that were statistically significant in the univariate analysis were included in the multivariate logistic regression analysis. Multivariate analysis of extensive sickness absence among MPS pupils showed a statistically significant relationship with lower age, lower parental educational score, doctor's visits, and other unauthorised absence, when compared with pupils with occasional sickness absence. Among SSPE pupils all other types of school absence showed a statistically significant relationship with extensive absence. This indicates that in addition to extensive sickness absence, these pupils are also more often reported absent for other reasons.

Table 1. Types of school absence in primary education in the school year 2015/2016.

Type of school absence	MPS: Number of pupils (%) N=2216	SSPE: Number of pupils (%) N=1000
Sickness absence	1663 (75.0) *	708 (70.8)
Occasional sickness absence	1372 (61.9) †	483 (48.3)
Extensive sickness absence	291 (13.1) †	225 (22.5)
One or more long period of sickness absence (>9 days and <4 periods)	42 (1.9) †	19 (1.9)
High frequency of sickness absence (>4 periods and <9 days)	129 (5.8) †	79 (7.9)
Both long periods of sickness absence and high sickness absence frequency (>9 days and >4 periods)	120 (5.4) †	127 (12.7)
Doctor's visits	574 (25.9) **	314 (31.4)
Other authorised absence	539 (24.3) †	337 (33.7)
Tardiness	219 (9.9) **	135 (13.5)
Other unauthorised absence	40 (1.8) †	80 (8.0)

MPS: Mainstream primary schools

SSPE: Special schools for primary education.

* $p < 0.05$, ** $p < 0.01$, † $p < 0.001$ at 95% confidence interval between MPS and SSPE.

Table 2. Frequency and duration of school absence among pupils in primary education in the school year 2015/2016.

		MPS (total N pupils:2216)			SSPE (total N pupils:1000)		
		Mean (SD)	Median	Range	Mean (SD)	Median	Range
Sickness absence	Duration (days)	4.30 (4.44)	3*	0.5-63	6.24 (6.94)	4	0.5-80
	Frequency	2.73 (2.36)	2*	1-31	3.74 (3.26)	3	1-28
Doctor's visits	Frequency	2.18 (3.13)	1*	1-35	2.39 (1.87)	2	1-12
Other authorised absence	Duration (days)	2.52 (4.15)	1*	0.5-62.5	1.65 (1.60)	1	0.5-12
	Frequency	1.85 (2.86)	1*	1-56	1.73 (1.99)	1	1-24
Tardiness	Frequency	4.91 (8.44)	2*	1-66	4.55 (6.59)	2	1-43
Unauthorised absence	Duration (days)	1.05 (0.98)	1*	0.5-5.5	1.93 (2.56)	1	0.5-13.5
	Frequency	1.15 (0.43)	1*	1-3	1.86 (2.36)	1	1-14

MPS: Mainstream primary schools
SSPE: Special schools for primary education.
* Significant difference between MPS and SSPE at 95% confidence interval p<0.001

Table 3. Logistic regression analysis of factors associated with extensive sickness absence (versus occasional sickness absence).

	MPS			SSPE		
	Number of Pupils	Univariate Exp(B)	Multivariate Exp (B)	Number of Pupils	Univariate Exp(B)	Multivariate Exp (B)
Sex ♀	1525	0.98	0.75-1.28	-	0.98	0.70-1.37
Age	1513	0.93*	0.89-0.99	589	1.01	0.93-1.10
Low parental education level	1524	2.00*	1.25-3.18	-	-	-
Doctor's visits ▪	1530	2.14**	1.63-2.83	708	1.63**	1.18-2.25
Other authorised absence ▪	1530	1.42*	1.06-1.89	708	1.94**	1.41-2.68
Tardiness ▪	1530	1.22	0.80-1.85	708	2.67**	1.79-3.99
Other unauthorised absence ▪	1530	5.06**	2.38-10.74	708	3.22**	1.98-5.23

MPS: Mainstream primary schools , SSPE: Special schools for primary education, CI: Confidence Interval.
♀ reference: male
▪ having any of this type of absence at least once during the academic year 2015/2016. Reference: having none of this type of absence.
* p<0.05, **p<0.01, 95% confidence interval.

Discussion

This study was performed in eight MPSs with 2216 pupils and six SSPEs with 1000 pupils in order to gain insight into the prevalence of school absence and the relationship between extensive sickness absence and pupil characteristics and other types of school absence.

Prevalence of School absenteeism

Most pupils, 85% in MPSs and 79% in SSPEs, were absent at least once during the school year, with total school absence rates of 2.1% and 2.9%, respectively. The most common type of absence from school in primary schools was absence due to sickness: 75% of MPS pupils and 71% of SSPE pupils were reported sick at least once in the school year, with sickness absence rates of 1.8% and 2.5%, respectively. While comparable research is limited, reports from Scotland and England were available and show similar figures with total school absence rates of 5.0% in Scotland and 4.0% in England, and sickness absence rates of 2.9% and 2.4%, respectively. [35, 36] In the current study, unauthorised absence occurred rarely in MPSs (1.8% of pupils) and more frequently in SSPEs (8.0 %). However, even 8% in SSPE seems low when considering that research often focuses on unauthorised absence. [2,18] In Dutch, Scottish and English primary schools, sickness absence is clearly the most prevalent type of absence. Although comparison of prevalence between studies is difficult as findings may be influenced by differing selection methods, type of school and the way absence is measured. In the USA Cook et al developed a primary school absence programme and found that only 47% of all absences were authorised. [24] Sickness absence was not specifically mentioned. The high prevalence of sickness absence and low prevalence of unauthorised absence found in the current study might be explained by the fact that it is easy to report a child as sick in the Netherlands, and it may be more convenient for a parent to report their child as sick than explain unauthorised absence to the authorities.

Extensive sickness absence

This study found that extensive sickness absence occurred frequently: 13% of MPS pupils and 22.5% of SSPE pupils were reported sick for more than nine days or more than four periods.

The current study showed that extensive sickness absence in MPSs occurred more often in younger pupils, and where parents had a lower educational level. A young age has previously been described as related to chronic school absence. [6] The relationship between extensive sickness absence and age may be due to childhood diseases in younger children, or may be related to the start of mandatory attendance.

[6, 37] Dutch primary education starts at four years-old and lasts eight years, however, the first year is not mandatory. [38] The relationship found between a lower parental educational score and extensive sickness absence is in line with other studies that also found parental education and lower socio-economic status were associated with more absence from school. [10, 18, 25]

In SSPEs, extensive sickness absence is associated with all other types of school absence, irrespective of pupil age. In MPSs extensive sickness absence is associated with more doctor's visits and unauthorised absence. In addition to days missed due to extensive sickness absence, pupils miss even more days in school for other reasons, when compared with those who are only reported sick occasionally.

MPS Vs. SSPE

Compared with MPS, SSPE pupils were slightly less often reported as absent (85% vs 79%, respectively) or sick (79% vs 71%). However, regarding the subsamples of sickness absence, the sickness absence frequency and duration was higher in SSPEs than in MPSs. The reasons for attending SSPE, e.g. behavioural, learning and parental factors, have previously been described as influencing school absence, and thus the differences in the frequency and duration of sickness absence between MPS and SSPE might be explained by these factors. [10] Whether behavioural, learning or parental factors cause sick reporting either directly or through increased vulnerability to illness, is unknown.

Strengths and Limitations

As the age and sex distribution of pupils in the absence registry (MPSs: 7.95 years-old, 50% boys, SSPEs: 9.64 years-old, 64% boys) were all similar to their national equivalent (MPS: 7.87 years-old, 51% boys, SSPE: 9.57 years-old and 67% boys), the results of this study appear to be generalisable to those in other areas in the Netherlands. [26, 31]

To determine the occurrence of school absence, the total number of pupils at the end of the school year were used, rather than the total at the start. As more pupils enrol than leave during the school year, the totals at the start of the school year would have given an overestimation of absence. However, as late enrollees have less opportunity to be absent, using the end of the school year means that school absence might be even higher than found in this study.

In this sample, the average school size (MPS: 277 pupils and SSPE:167 pupils) was moderately larger than the national average (MPS: 224 pupils and SSPE: 122 pupils), and prevalence of MPS pupils with a low parental educational score (6%) was lower

than the national average of 9%. [32] As a larger school size has previously been shown to be related to more school absence (9), and a low educational score was associated with more extensive sickness absence, the national prevalence of extensive sickness absence may well be even higher than found in this study.

Schools that did not agree to participate in this study stated time constraints and once, low prevalence of sickness absence among pupils as the main reason. It is unknown whether the prevalence of school absence in these schools is actually different.

Extensive sickness absence

Using a threshold for extensive sickness absence creates the opportunity to compare groups. The design of the threshold used in this study was based on interviews in schools and theorised that the pupils most at risk of negative consequences were those with sickness absence 1SD above the average sickness absence frequency or duration (as reported in a pilot study). [29] As the groups selected in the current study had extensive sickness absence and missed additional days due to other types of absence, it appears that a vulnerable group was selected. Whether or not this threshold selects the most vulnerable pupils has not been tested.

Absence registration

The absence data were recorded daily by school employees and were collected retrospectively, thus minimising recall and information bias. Simultaneously, using retrospective analyses left no opportunity to improve the accuracy of recording absence. According to participating schools, not all teachers recorded every absence. Tardiness in particular might be subject to underreporting as not all schools expect punctuality. Previous studies have reported on the variations in recording practices, therefore it is not unlikely that this may also have caused underreporting in the current data. [24,25,39] The size of the current sample, i.e. 14 schools with 3216 pupils, minimises the effect of individual recording mistakes.

Recommendations for further research

Most absence in the participating Dutch primary schools was because pupils were reported sick, which is similar to reports from Scotland and England. [35, 36] Traditionally, the focus of research into school absence has been on unauthorised absence, possibly because of a lower prevalence of sickness absence in other countries such as the USA. Another explanation could be that, as its cause seems medical, sickness absence is seen as inevitable. However, this study suggests that learning, behavioural and parental factors may also play a role. More research is therefore needed to determine the prevalence of sickness absence in other countries and to determine the factors that influence sickness absence. Country-specific approaches

to defining, recording and addressing school absence should be taken into account when examining this topic.

The threshold used for extensive sickness absence should be further examined to determine if those pupils who are most vulnerable to adverse outcomes can be selected using these criteria, and if these criteria should be adjusted when used in other countries.

Conclusions

This study shows that in Dutch primary education school absenteeism is most often due to children being reported sick. Moreover, extensive sickness absence is common (13.1% in MPSs and 22.5% in SSPEs), and occurred more often in SSPE pupils than in MPS pupils. In MPSs, younger pupils and pupils with parents with a lower educational level appeared most at risk of extensive sickness absence. Additionally, in comparison with pupils with occasional sickness absence, pupils with extensive sickness absence were absent on more days for reasons other than sickness. Thus, these pupils miss even more days of school, likely increasing their disadvantage by missing lessons and contact with their peers. Combined with the high prevalence of extensive sickness absence found in this study, this is reason to worry. To prevent adverse effects on children's development it is of utmost importance that public health research, policy and practice address sickness absence among primary school pupils.

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CHAPTER

3

Stakeholder perspectives on
primary school pupils and sickness
absence - Exploring opportunities
and challenges

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Abstract

Background

School absenteeism and its underlying causes can have negative effects on the cognitive, psychosocial and health development of a child. Research in primary education show high rates of sickness absence. Many stakeholders are involved in addressing school absenteeism, including primary school professionals, child and youth healthcare physicians, school attendance officers and parents. This study explores these stakeholders' perspectives, their approaches and what they envisage to be necessary in order to improve. It also aims to unveil opportunities and challenges in addressing sickness absence among primary school pupils.

Methods

Qualitative research was performed with six semi-structured focus group interviews and involving 27 participants from the West-Brabant and Amsterdam regions of the Netherlands. Thematic analysis was used.

Results

The overarching theme was aiming for the child's well-being. Each focus group interview started with low awareness of sickness absence as a threat to this well-being, but awareness grew during the interviews. The participating stakeholders regarded problematic sickness absence as complex due to a wide variety of causes, and felt that each other's expertise was necessary to reduce sickness absence. Schools registered absence, but only occasionally used planned steps; they based the identification of problematic sickness on gut feeling rather than any agreed-upon criteria.

Conclusions

To be able to systematically address sickness absence and thus improve the well-being of children, stakeholders felt the need for a clearly structured approach, including monitoring of sickness absence of all pupils, identifying problematic absence and promoting collaboration with other stakeholders. An approach should allow for tailoring solutions to the individual child.

Introduction

School absenteeism is of major concern to both the educational and public health sectors as it can lead to lower educational achievement, school drop-out and eventually, health problems. [1,2] As such, school absenteeism is associated with a wide variety of underlying physical, psychological, and social problems, the negative consequences of which can threaten a child's development. [1,4]

To date, school absenteeism has been studied predominantly in secondary education, although it also occurs frequently in primary education. [1,4,5] For example, 20% of 9 year old pupils in Ireland miss 20 or more school days. [1] Additionally, 91% of English primary school pupils and 85% of Dutch pupils were absent at least once during a school year. In both England and the Netherlands, illness is reported to be the main reason for absence. [6,7] Research in secondary education has shown that sickness absence can have many different causes, not just physical illness, but also social, psychological and lifestyle problems. [8] Whatever the cause, finding the right care through cooperation between school, parents, students and youth healthcare physicians helps to solve underlying problems and reduce absenteeism. [9,10] Research in primary education suggests that some children, with additional education needs or challenges at home, are absent more often, which can increase their educational and social disadvantages. [7,11,12] Therefore, this study aims to find opportunities to address sickness absence among primary school pupils and highlight any challenges. The study was done in the Netherlands, where the problem of sickness absence is acknowledged by policy makers who expect primary schools to have an absenteeism protocol. [13] The approach to unauthorised absenteeism (e.g truancy) is described in the School Attendance Act and can be enforced by a school attendance officer, however, there are no guidelines to tackle sickness absence in primary education. [14]

The advantage of addressing sickness absence and its consequences in primary education, as opposed to secondary education, is that it offers the opportunity for prevention, as absenteeism patterns generally starts at a young age. [15-17] In order to map opportunities for preventing sickness absence and to address its challenges, it is necessary to explore the perspectives, experiences and ideas for improvement of the relevant stakeholders. This study concentrates on four groups of stakeholders who are directly involved with sickness absence among primary school pupils in the Netherlands. Firstly, school professionals (principals, special needs coordinators and teachers), who are responsible for education even when a child is absent, and who record and address absence and its educational consequences. Secondly, child and youth healthcare professionals, who offer preventive healthcare to all children in

accordance with the Netherlands Public Health Act. [18] Their aim is to optimise the development of children and act on potential threats to that development. Sickness absence is considered to be one of those threats. [19] Thirdly, school attendance officers, who address unauthorised absenteeism. Fourthly, the parents, who are the primary caregivers and report their child as sick.

Exploring these stakeholders’ experiences of sickness absence will show how children who are absent due to illness are currently identified, then approached and supported, and will give some insight into possible improvements. Three research questions will be addressed in this study with directly involved stakeholders:

- 1. How is sickness absence among primary school pupils viewed?
- 2. How is sickness absence among primary school pupils currently approached?
- 3. Does the current approach need to be improved, and if so, how?

Methods

Qualitative research was performed using six semi-structured focus group interviews, held in 2017, with a total of 27 participants. Participants were recruited in two areas of the Netherlands, one rural and the other urban: West-Brabant and Amsterdam.

Sampling

Representatives of four groups of stakeholders were approached, i.e. school professionals, school attendance officers, child and youth healthcare professionals and the parents of primary school pupils. The group of school professionals consisted of principals, special needs coordinators and teachers.

Three sampling techniques were used: convenience sampling, purposive sampling and snowball sampling. Respondent characteristics are presented in Table 1.

First, using convenience sampling, fifteen primary schools participating in another study on school absenteeism were approached in January 2017 and asked to recruit a member of staff for a group interview. [7] These schools are located in the West-Brabant region in both urban and rural areas and are a sample of the 272 schools in this region. Ten schools were interested in participating and three principals and three special needs coordinators from these schools attended the group interviews (response 60%). The main reason for non-response was that they were unavailable on the date of the interview.

Table 1. Characteristics of respondents in group interviews

#	Function	Region	Employer	Interview	Work experience / number of children
1	Principal	1	School 1	1	unknown
2	Principal	1	School 2	1	unknown
3	Principal	2	School 3	1	< 5 years
4	CYH physician	5	Regional public health office	1	< 5 years
5	CYH physician	4	Regional public health office	1	> 20 years
6	SNC	3	School 4	2	> 20 years
7	SNC	4	School 5	2	> 20 years
8	CYH physician	4	Regional public health office	2	> 20 years
9	SAO	2	Regional school attendance office	2	10 - 15 years
10	SAO	1	Regional school attendance office	2	5 to 10 years
11	SNC	1	School 6	3	> 20 years
12	CYH physician	1	Regional public health office	3	5 to 10 years
13	CYH physician	2	Regional public health office	3	> 20 years
14	SAO	1	Regional school attendance office	3	< 5 years
15	Principal	6	School 7	4	5 to 10 years
16	SNC	6	School 8	4	10 to 15 years
17	CYH physician	6	Regional public health office	4	unknown
18	CYH nurse	6	Regional public health office	4	unknown
19	SAO	6	Regional school attendance office	4	5 to 10 years
20	Parent	n/a	Regional public health office	5	3 children
21	Parent	n/a	Regional public health office	5	5 children
22	Parent	n/a	Regional public health office	5	4 children
23	Parent	n/a	Regional public health office	5	5 children
24	Parent	n/a	Regional public health office	5	2 children
25	Principal and SNC	5	School 9	6	< 5 years
26	Teacher	5	School 9	6	10 to 15 years
27	Teacher	5	School 9	6	10 to 15 years

CYH: Child and Youth Healthcare
n/a: not applicable
SAO: School Attendance Officer
SNC: Special Needs Coordinator

Second, teachers were approached separately. Two schools in the West-Brabant region were contacted through a convenience sampling method. The two school principals chose a date and invited their teachers. One school pulled out due to an emergency. Two teachers and a principal attended the group interview (response 50%).

Third, child and youth healthcare physicians and school attendance officers were approached through purposive sampling. With the aim of recruiting participants

with expertise in school absenteeism and experience with primary school pupils, the physicians and officers working with the ten interested schools were approached. Eight child and youth healthcare physicians were approached, five of whom were able to attend the group interviews (response 63%). Nine school attendance officers were approached, three of whom were able to attend the group interviews (response 33%).

Additionally, a sample of school principals, special needs coordinators, school attendance officers and child and youth healthcare professionals was created in a different region: the city of Amsterdam. Participants were invited through snowball sampling, starting with one child and youth healthcare physician in Amsterdam who approached potential participants in her network, who in turn asked others. A principal, a special needs coordinator, a school attendance officer, a child and youth healthcare physician and a nurse were included.

Finally, a sample of parents of primary school pupils was formed. As a snowball sampling method was unsuccessful, a convenience sample was taken among employees from a regional public health office. Parents had to have at least one child in primary education (inclusion criterium) and could not work for the child and youth healthcare department or directly with schools (exclusion criterium). Approximately 40 employees were approached, seven of whom were eligible for inclusion and four of whom agreed to participate (57% response). They had children of different ages who attended different schools, varying professional backgrounds (e.g. information technology, infectious disease prevention) and educational levels (e.g. a vocational education degree, or a university degree).

Data collection with focus group interviews

To stimulate discussion, four focus groups were heterogeneous, with a mix of school principals, special needs coordinators, child and youth healthcare professionals and school attendance officers. One group interview with teachers comprised school professionals only. To facilitate a safe interview environment for these two stakeholder groups, the group interview with parents did not include any other stakeholders (Table 2).

The six semi-structured focus group interviews were conducted face-to-face by the first author and a second researcher in 2017. The interviews took place at meeting rooms in schools or at the regional public health office and lasted 45 minutes on average. They were recorded with informed consent. The topic guide, based on the literature, included open-ended questions concerning the general thoughts of stakeholders about pupils who were reported sick, the causes

of sickness absence, the factors that influence it and current approaches to sickness absence. [1,11,20-23] They were also asked for their opinions and ideas about what needed to be done to address the challenges of sickness absence. Additional topics raised by participants were also explored. After the first, fourth and fifth interviews, intermediate analysis was performed to determine whether all topics had been explored sufficiently, and if new concepts had arisen. If this was the case, these were addressed in the subsequent interview. No new themes were introduced after the fourth interview.

Table 2. Overview of stakeholder groups represented in six focus group interviews

Focus group Interview	Stakeholders	Location
1	3 Principals 2 Child and youth healthcare physicians	West-Brabant
2	2 Special needs coordinators 2 School attendance officers 2 Child and youth healthcare physicians	West-Brabant
3	1 Special needs coordinator 1 School attendance officer 2 Child and youth healthcare physicians	West-Brabant
4	1 Principal, 1 Special needs coordinator 1 School attendance officer 2 Child and youth healthcare physicians 1 Child and youth healthcare nurse	Amsterdam
5	1 Principal 2 Teachers	West-Brabant
6	4 Parents	West-Brabant

Analysis

All interviews were transcribed verbatim. A thematic analysis was performed to examine the experiences of stakeholders and assess their ideas for improvement. [24] The transcripts were open-coded by two authors. The transcripts and codes were discussed by all authors, and categories were then defined based on the information in the transcripts. Themes were defined, also in relation to one another, by constant comparison with the interviews and discussion with all authors. When it was deemed necessary, codes and theme definitions were adjusted.

Ethical considerations

The study was approved by the Medical Research Ethics Committee of the Academic Hospital Maastricht/Maastricht University (METC 17-4-026). Support from the three regional school partnerships, the regional public health office, municipalities and the school attendance office in the West-Brabant region, as well as the regional

public health office and the municipality of Amsterdam was obtained for this study. Participation was voluntary and consent forms were obtained. Data were stored anonymously.

Results

The overarching theme shared by all participants was the importance of the child’s well-being. In the interviews, participants discussed when they considered sickness absence to be problematic for the well-being of the child, as well as their worries about the problems underlying the absence. Additionally, the steps in their current approach and their ideas on what was necessary to develop a structured approach and improved collaboration were discussed. The themes are pictured schematically in relation to one another in Figure 1 and are described below.

Key theme: the importance of the child’s well-being

A drive to ensure the child’s well-being was recognisable in all interviews, although rarely discussed specifically. Participants across all interviewed stakeholder groups discussed various aspects of the child’s well-being, such as the psychosocial well-being, e.g. feeling happy and safe at home and at school, being healthy enough to attend school and having the chance of a healthy future.

“Well, I’m here because of an idealistic standpoint too. I want every child to have a good time at school, to be happy to go to school and to feel safe.” – Special needs coordinator

The concept of the child’s well-being created common ground for participants during the interviews, and can be understood as the basis of their actions and ideas.

How the stakeholders view sickness absence

Prior to the interviews, parents and school professionals had not actively considered sickness absence as a factor in the child’s well-being. However, child and youth healthcare professionals and school attendance officers firmly expressed their belief that sickness absence is related to a child’s well-being. During the interviews, awareness of sickness absence as a threat to a child’s well-being grew in all participants.

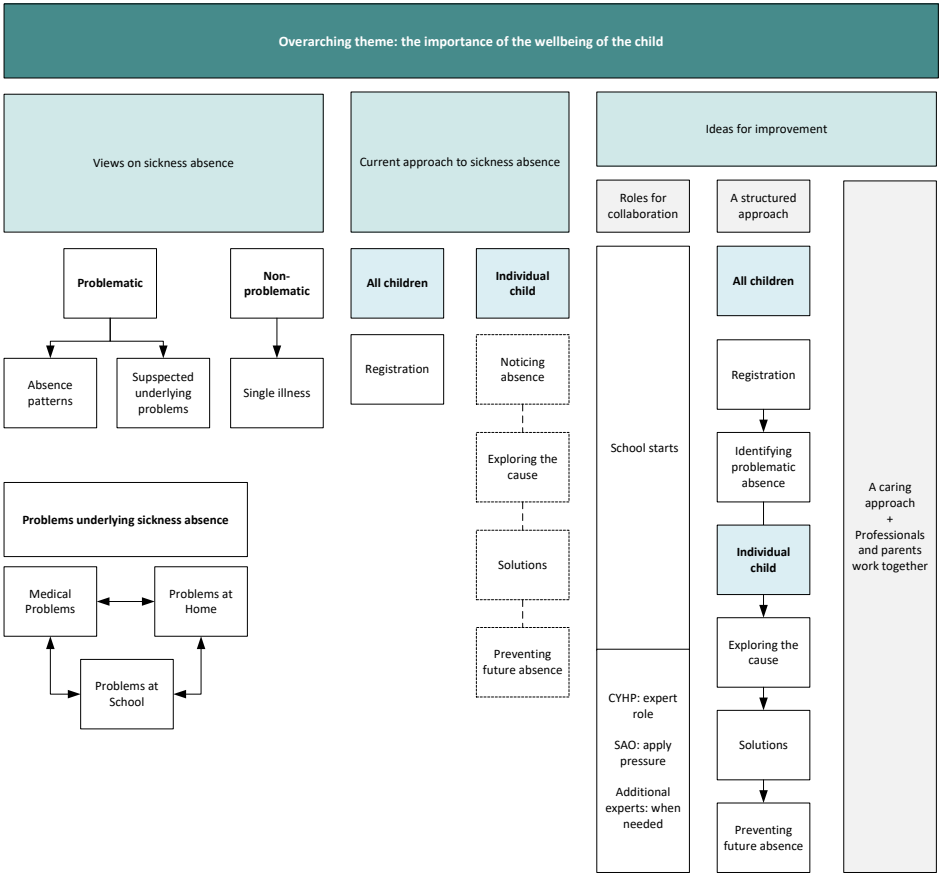
Sickness absence as a problem

According to participants, there are many reasons to regard absence due to sickness as ‘problematic’, as something that needs action. Firstly, when the pattern deviates from what is expected. If it feels as if the sickness absence is lasting too long, if it

happens too often or if it frequently occurs on the same day of the week, professionals considered the absence to be problematic. Sickness absence in the days around a holiday period raised suspicion of unauthorised absence.

“I believe it when they are ill for three or four days, for example, and then one after the other goes off. (...) But, being reported sick every Monday, I don’t consider that normal. And I also don’t think it’s normal on the Friday afternoon just before a holiday.” – Teacher

Figure 1. Themes in relation to sickness absence among primary school children according to directly involved stakeholders.



CHYP: Child and youth healthcare physician, SAO: School attendance officer

Secondly, professionals consider it more problematic if they suspect there are problems at home or at school, and the period of absence is regarded as a sign of that problem. Both deviant sickness absence patterns and absence associated with an existing problem situation were regarded as a sign of underlying problems. These underlying problems caused participants to worry about a child's well-being, more so than any negative social-emotional and cognitive consequences of the absence. School professionals and parents genuinely believed that absence would not impact the child's cognitive development in a meaningful way. Some special needs coordinators were worried about the social-emotional aspect of frequently missing school.

“The cognitive side is the least worrying, I think. But, of course, the social and emotional aspect, that a child would miss out on that...” – Special needs coordinator

Child and youth healthcare professionals and school attendance officers felt differently, they stressed that both underlying problems and the absence itself have negative consequences for the child's development and well-being.

“Being ill happens by chance (...), but sometimes there are patterns that start in primary school, continue in secondary school and right into your working life.(...) It can cause you a lot of bother.” – Child and youth healthcare professional

Child and youth healthcare professionals and school attendance officers believed that addressing problematic absence in primary education could prevent future problems. School professionals and school attendance officers believed that the only legitimate reason for the child to be reported sick is when the child is too ill to attend school. Otherwise, the absence was considered as non-legitimate reason and likely problematic. In contrast, child and youth healthcare professionals did not approve of this distinction as it excludes the sickness absence that is due to illness from being considered problematic. They believed that 'legitimate' absence could be as problematic for the child's well-being as 'non-legitimate' absence, because absence due to sickness can be a sign of unknown problems or the suboptimal treatment of known problems.

“When a child has an illness, more support is needed. (...) Are the specialists even aware of the absence? Therefore, I think it is a problem even before the question of legitimacy arises.” – Child and youth healthcare professional

Child and youth healthcare professionals felt it was important not to ignore sickness absence considered legitimate by others, as they saw opportunities to address the physical problems, and thus reduce sickness absence.

Although problematic sickness absence was discussed extensively during the interviews, it was also clear that sickness absence is often considered unproblematic. Both parents and school professionals expected that in most cases, parents report their child sick for a single episode of illness with no long-term impact on the child's well-being. Participants saw it as a necessary period of absence that occurs when a child is too ill to go to school. In the opinion of the participants, this is something that happens only occasionally, and not for such a long period that it has consequences for the child.

“When you get a report from the parent that the child is ill, then that's all I expect it to be. You wish them well and hope the child gets better soon.” -Teacher

As parents are the ones to report a child as sick, some participants recognised that parents have to make a decision; weighing the need for school on the one hand, and the need to stay at home on the other. Professionals believed some parents decide to report their child as sick more easily than others.

“Someone has decided, made the choice, that it is not possible today. I always keep in mind that it isn't always because the child is very ill, but a combination of the burden parents can cope with and the medical situation of the child.” – Child and youth healthcare professional

Parents illustrated this decision by sharing the complex weighing of factors: physical symptoms, personality, motivation and need to go to school, the demands of a school day and sometimes the parents' work obligations.

“My oldest will go to school no matter what, she loves school, so she'll go. (...) I think that's great! Perhaps it's selfish, but as working mother or father it can be difficult to stay home.” – Parent

Types of problems underlying problematic sickness absence

Participants said that when absence due to sickness is problematic, the underlying causes vary enormously and might include medical problems, problems at home and problems at school.

Absence due to medical problems

Participants supposed that most pupils who are reported sick have some type of illness or physical complaint. For example, a child might have the flu or an asthmatic child might have had an attack. Most participants felt some physical symptoms (e.g. a high fever or broken bone) are more legitimate reasons for sickness absence than other symptoms (e.g. stomach aches or headaches).

“I believe that many children who are reported sick actually have signs of illness, like throwing up or a stomach ache, although stomach aches are more dubious.” - Principal

The causes of symptoms such as a stomach ache were thought to be vague and more likely to be influenced by psychological or social factors. School professionals and school attendance officers felt the lack of a clear physical cause made it more difficult to find a solution and thus, it was considered more concerning.

Problems at home

School professionals saw problems at home as the main cause of problematic sickness absence. For example, when there are transportation problems or when a lack of sleep causes a child to be too tired to attend school. Some school professionals also viewed neglect and child abuse as possible causes of sickness absence.

“We see that sickness absence also happens when parents have trouble raising their children, kids get tired or don’t eat well which means they are ill more often. And sometimes parents can’t cope, when it’s raining and (...) instead of cycling 5 kilometres, they report their child as sick.” - Principal

School professionals considered the problems at home to be the most difficult to address because they felt it was outside their sphere of influence.

Problems at school

In contrast, the participating parents did not discuss problems at home, instead they believed problems at school such as bullying or a lack of connection with the teacher to be an important contributor to sickness absence. Parents experienced that it can be difficult to pinpoint and address problems at school. They felt that they had little influence on what happens at school and felt lucky if their child had a good teacher to help solve school related problems.

“For weeks one of my children would cry in bed on Sunday evenings

because he had to go back to school the next day. In hindsight, it was because he felt misunderstood at school. That is when you might be inclined to think he might be ill, and you worry, and you would keep him at home the next day. But I thought, no, you aren’t ill, something is up. But just try and find out what...” – Parent

Albeit with a degree of caution, school professionals wondered if feeling unsafe in class could contribute to absence, suggesting that bullying or too many children with disabilities in the class might lead to a negative class environment, which in turn might influence the child’s need to report sick. Participants felt that the different causes should be taken into account when addressing problematic sickness absence.

Current approach

Two aspects could be distinguished in the current approach of professionals to sickness absence: the registration system for all pupils and the specific approach to an individual child who is reported sick. Generally, the registration systems were presented as weak. However, when sickness absence in a child was considered to have become problematic, professionals acted in similar ways.

Weak registration systems

Most school professionals reported using software for the registration of absence, one special needs coordinator reported that the software was so complicated that they used pen and paper instead. Most school professionals had never looked at the prevalence of sickness absence in their schools, a few principals revealed that they had looked into the prevalence for the first time just before the interview and they felt shocked by the high prevalence they found, and considered it a real blind spot. School attendance officers pointed out that the software systems used for registration do not seem designed to help schools gain insight into school absenteeism.

School attendance officers and child and youth healthcare professionals believed that schools are likely to underestimate how often children are reported sick. They worry that children will develop the habit of being absent before school recognises the absence as problematic.

Steps taken on behalf of the individual child with problematic absence

Regarding the individual child, school professionals unknowingly acted in similar ways when dealing with children who have been reported sick. A recognisable six-step structure emerged from the interviews: 1. registration, 2. identifying problematic sickness absence, 3. exploring the cause of individual absence, 4. solving underlying problems, 5. applying proven solutions, and 6. preventing future absence. Each

school professional had implemented one or more of these six steps, although no one had implemented all the steps.

Registration. A register of absence is kept for all children. The parents report their child as sick and school professionals register this as sickness absence. Additionally, the teacher checks their class and contacts the parents of any absent children. Depending on the parents' explanation, sickness or another reason, absence is then registered.

Identifying problematic sickness absence. School professionals revealed there is no universal method in place to identify children when registered absenteeism occurs either often, or for long periods of time. Sometimes teachers and principals noticed persistent sickness absence by chance or went on gut feeling. If they suspect problematic absence, they act.

Exploring the cause. All participants said that if problematic absence is suspected, it is important to talk to the parents. Some school professionals made special appointments to do this, some telephoned and some talked to parents at drop-off or pick-up times. All participants believed that it is the teacher's job to talk to the parents. Parents considered school professionals asking after children who had been reported sick to be a sign of involvement, and when they did so parents felt more willing to share their concerns. When back at school, school professionals question the children themselves about the sickness absence, considering it necessary for the child's well-being to know what happened. While doing so, some felt it was dishonest to question children without the parents knowing, and it made them uncomfortable. Teachers who then found out the child was not ill said they never discuss this finding with the child or its parents because they do not see a reason to do so and felt it would damage the relationship with parents needlessly.

T1: Children are very open'.

T2: "We've been to the theme park!' Really? How nice."

T1: "And then?"

T2: "Well, I'm not going to say: weren't you ill?"

Interviewer: "Would you talk to the parents?"

T2: "Actually, no."

P: "No, I think in practice, we're very nice and don't give that sort of feedback."

– Teachers and principal

Solving underlying problems. School professionals felt they could often solve school-related problems without outside help. However, they felt there was a limit to their

ability to help with sickness absence if there were medical problems or problems at home. At the same time, school professionals sometimes felt reluctant to seek outside help. They reported a variety of positive and negative experiences when collaborating with the social care or health care services. School professionals were disappointed when collaborating with inactive or frequently changing professionals, and felt especially dissatisfied with child protection services. When school professionals did collaborate, they preferred to go to a professional they knew and trusted, even if an unknown professional had more appropriate qualifications. School professionals had therefore developed their own trusted network of professionals.

"A lot has changed with the social workers and coincidentally we have a child healthcare physician who was a parent at our school, and then we kind of do it like this [moving his hand in a zig-zag motion]" – Principal

Child and youth healthcare physicians also noticed that pupils were only referred to them if a school professional knew the physician well. Some school professionals have regular meetings with child and youth healthcare physicians, social workers and school attendance officers. They regarded these meetings as constructive and an easy way to discuss and refer children in need. Other school professionals had only occasional or no contact with a child and youth healthcare physician.

Applying proven solutions. Professionals shared solutions that had worked for specific children in the past, such as psychological treatment or contacting medical specialists. School professionals always paid attention to the immediate cognitive effects of absence, using homework and repetition to support a child who had been absent.

"Just practically, if they've missed three days, you'll look at what they've missed. (...) Repeat, repeat, repeat and then you can join the rest of the class." - Teacher

Preventing future absence. Professionals said that talking to parents and improving their relationship with parents was really important to prevent future problems and reduce absence. Additionally, some participants had experienced that returning to school was easier if a child was kept involved with school in some way, even when attendance might not yet be possible.

Ideas regarding improvements

While some participants had not previously explicitly reflected on addressing sickness absence, during the interviews all participants agreed that it was necessary to improve the approach to sickness absence in the interest of the child's well-being.

The participants felt that their roles in any future approach needed to be made clear and supported a universal approach.

Defining roles

Participants wanted the roles of those involved with sickness absence to be defined. Previous collaborations with social care and healthcare professionals had sometimes left school professionals feeling frustrated because their responsibilities had been unclear.

“I am not talking about a child with an earache, (...), I’m talking about the excessive and the remarkable cases. (...) Those that disappear from the school’s view, and then you get the ‘frustration story’(...), who is the person involved with that family, and what are their responsibilities?” - Principal

Participants discussed the roles school, child and youth healthcare, school attendance officers and other professionals should play in sickness absence.

School should take the initiative. When discussing sickness absence, the participants felt strongly that the teacher should take action first and contact the parents. Next, participants thought that the principal and special needs coordinators were needed to help identify extensive absence, support the teacher and parents if conversations become difficult and to contact other professionals if necessary.

“I believe it is important to realise that, when it comes to sickness absence, it isn’t just the teacher who is responsible. Actually, it’s the whole school, because it starts with the first phone call, when the child is reported sick by the parents.” - Child and youth healthcare professional

School professionals said their main aim was to provide an education, yet participants also believed that schools should try to improve a child’s well-being.

“I agree with the principal that it would be nice if there were a circle of people around us to whom we could refer. Because, of course, our primary task is to provide an education. However, we have so many other things on our plate as well.” - Special needs coordinator

School professionals sometimes felt conflicted if the effort to support well-being took time away from education, therefore they wanted support.

Child and youth healthcare physicians play an additional expert role. The professionals across all stakeholder groups thought that as child and youth healthcare physicians have medical, psychological and social expertise they should be consulted when there is extensive sickness absence.

“As soon as something is wrong with the child, and there is also absence, I think you need to involve us. Otherwise, you might act on one part of the problem, without mapping the whole situation thoroughly.” - Child and youth healthcare professional

Schools expressed the need for support especially when confronted with medical or social problems. Participants were of the opinion that child and youth healthcare physicians could offer this support by examining the complex problem of sickness absence from different perspectives. Additionally, they could refer children to the appropriate care and create a plan for reintegration together with the child, parents and school professionals.

School attendance officers could use pressure if needed. School attendance officers believed their contribution in individual cases of sickness absence would be limited, as they do not have a medical background. However, they wanted to advocate the use of a new approach. Additionally, school attendance officers offered to apply pressure to encourage parents to send their child to school, if all else fails.

“And I believe that’s my job I guess. I don’t mind being the bogeyman, giving the message that what you are doing is unacceptable, it’s not in the interest of your child” - School attendance officer

School attendance officers said that they did not mind using the stick rather than the carrot, if it is helpful to the child’s well-being.

Social workers and others: supporting experts to address social problems. By far the most frequently mentioned other stakeholders were social workers. Specifically, when parents and school agree that the home environment is clearly causing sickness absence, social workers were considered to be the first professionals that needed to be involved. Professionals believed that more specialised professionals, such as psychologists or child protection workers, may be needed in more complex cases.

“The chain is only as strong as its weakest link. Where a child and youth healthcare physician can easily help you with that asthmatic child, when it gets to immense complexity, the network needs to be bigger.” - Child and youth healthcare professional

Participants expressed the opinion that if the roles of all involved had been clarified, collaboration would become easier. They also felt that a structured approach was needed.

Establishing a universal approach

The participants agreed that a method should be developed to approach sickness absence, and identified two main components that needed improvement: identifying possible problematic absence and the communication with parents by using a caring approach, rather than a controlling one.

Identifying possible problematic absence. Participants believed that registration and early identification of extensive sickness absence are the first steps towards addressing this problem, and many (but not all) regarded establishing a clear threshold for problematic sickness absence as necessary.

“It could be a point of reference, this is the line we’ve determined together, or researched, that is when we have to act”– Child and youth healthcare professional

Absence above this threshold is not always problematic and should therefore always be analysed in a positive way, without blame.

Caring instead of controlling. All participants felt that the communication between professionals and parents should be conducted in a caring manner by focusing on collaboration and involving parents. This will facilitate communication and enables common ground to be found more easily, i.e. the child’s well-being.

Discussion

The opportunities and challenges involved in addressing sickness absence among primary school pupils in the Netherlands, the perspectives of those stakeholders directly involved, their current approaches to the problem and the ideas for the future were explored by means of qualitative research using six semi-structured group interviews with 27 participants.

This study shows that the child’s well-being is regarded a shared goal of all stakeholders. The interviews appeared to create the awareness that a connection exists between sickness absence and the well-being of the child for some participants. The connection was already well-established and familiar to child and youth healthcare professionals

and school attendance officers. This is probably the case because these professionals are often involved in addressing problematic absence in secondary education. [9]

Participants suspected sickness absence to be problematic when absence patterns deviated from the norm, which is in accordance with a pilot study by Vanneste et al where a threshold of more than 9 days or more than 4 periods of sickness absence in a school year indicated problematic sickness absence. [11] Additionally, stakeholders consider sickness absence to be problematic when there are suspected problems at home or at school and believed the underlying problems causing sickness absence to be the biggest threat to a child’s well-being. This shows the importance of analysing and addressing the underlying causes of problematic sickness absence. In contrast, participants were less concerned about the negative effects of missing school. In fact, primary school professionals and parents saw no relevant connection between educational achievement and sickness absence. This is surprising, as research shows there is an association between school absenteeism and lower grades and early school leaving. [1,25,26] Participants in the current study may be less concerned about school performance because primary schools, compared to secondary schools, often have more time for repetition and for tailoring educational programs to the child, thereby mitigating the effects of any missed lessons. Participants also appeared not to value educational achievement as highly as the social and psychological well-being of the child.

The current approach to sickness absence seems arbitrary. Possibly, due to the lack of awareness, only a school professional’s ‘gut feeling’ determines whether or not a child’s sickness absence is noticed. Additionally, while child and youth healthcare professionals and school attendance officers think it is important to act, like school professionals, they believe they cannot start without the school. It was therefore considered necessary to structure the approach and to improve the collaboration between stakeholders. Collaboration benefits from a common goal and sharing information about role definitions. Awareness of each other’s roles can minimise negative experiences and promote trust, both of which are important prerequisites for successful cooperation. [27,28] Three main components were considered important for a structured approach. Firstly, a structured approach should eliminate the arbitrary aspect of identifying children who are reported sick. Identification has been shown to be important for early intervention in general school absenteeism. [20,29] Secondly, addressing sickness absence should be done in a caring manner rather than an accusatory one in order to improve communication between professionals and parents and to reach the common goal: the child’s well-being. Finally, when exploring and addressing the sickness absence of an individual child, the possible variety of underlying problems should be considered. Kearney and Grazyk recently described

school absenteeism as a heterogeneous problem that needed a multidimensional approach due to its intricacy. [2] The participants in the current study recognised some of the same intricacy in sickness absence, for example in the wide variety of causes and the parent’s decision to report the child as sick. Because different causes could require different solutions, the approach should allow tailoring to the needs of the individual child.

Recommendations for practice

This study shows that there is a clear need for a structured approach to sickness absence among primary school pupils. The necessary components of such an approach are shown in table 3.

Recommendations for further research

It is important to examine more thoroughly when sickness absence starts becoming problematic for the child’s development and well-being also including the different stakeholder perspectives on what ‘problematic’ constitutes (e.g. a responsive evaluation. [30] Additionally, future studies should examine the views of parents who have experience with what they regard as problematic sickness absence in their children.

Table 3. Components and actors recommended for an approach to sickness absence among primary school pupils.

Necessary components	Involved actor(s):
Registration and monitoring of the sickness absence of all pupils	Teacher
Identification of children with possible problematic sickness absence	Principal or special needs coordinator
Communication between school and parents using a caring approach, rather than accusatory	Parents and teacher, supported by principal or special needs coordinator
A problem analysis and subsequent plan, supported by experts	Parents, school professionals and experts
Combining medical, psychological and social expertise	Child and youth healthcare physicians
Supporting the home environment	Social workers
Adding pressure when needed	School attendance officers
Tailored to the child’s situation	Additional experts can be involved when needed.

Methodological strengths and limitations

To the best of our knowledge, this is the first study to examine the views of stakeholders on sickness absence in primary education, their current approach and possible improvements.

One of the strengths of this study is the variety of participants. Non-response was relatively low and without systematic reasons. An exception were the participating parents; who all worked for a health-care organisation. There were no parents with chronically ill children or low socioeconomic status or with language barriers included in our study. Those parents may have different experiences with sickness absence.

Another strength was the heterogeneity of group interviews with school professionals, child and youth healthcare professionals and school attendance officers; as these stakeholders are used to working together, it was deemed likely that they would feel safe enough in heterogeneous groups. Homogeneous groups were created for teachers and parents in order to promote safety and limit any socially desirable answers.

Conclusion

Sickness absence among primary school pupils is regarded problematic if caused by underlying problems that impact the child’s well-being, according to a variety of stakeholders. Children with problematic sickness absence are overlooked in the schools’ current approach, showing that registration alone is not enough. A structured approach to sickness absence in primary education is necessary, including the monitoring the sickness absence of all pupils and taking actions tailored to the individual child’s needs.

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CHAPTER

4

How to deal with sickness absence
among primary school pupils?
Adaptation of the 'Medical Advice
for Sick-reported Students'
intervention

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Abstract

Background

Missing school impacts both education and health. The purpose of this study was to address sickness absence in primary schools by adjusting the ‘Medical Advice for Sick-reported Students’ intervention for secondary schools. This was necessary because of fundamental differences in relation to the children’s age and in the schools’ organizational structure.

Methods

The intervention mapping approach steps 1 through 4 were used to adapt ‘Medical advice for sick reported students’ to primary schools (MASS-PS), including a literature search, stakeholder interviews, establishing a planning group and pre-testing.

Results

In step 1, a planning group was formed and a logic model of the problem was created. In step 2, a logic model of change was created. In step 3, a theoretical basis and practical strategies were determined. In step 4, practical support materials were designed, and two pre-tests of the materials were performed.

Conclusions

Intervention mapping was successfully used to adapt MASS to primary schools. The main changes were the lowering of the threshold for extensive sickness absence, consultations between teacher and attendance coordinator, and addition of two experts. With MASS-PS, sickness absence can be addressed as a ‘red flag’ for underlying problems.

Introduction

Education is crucial for a child’s healthy development. Missing school frequently can lead to lower educational achievement, early school dropout and health problems. [1–4] Research in the Netherlands and England suggests that primary school children miss on average 2 - 4 out of 100 school days and sickness absence is the most common type of school absenteeism. [5-7] This study focuses on developing an intervention to manage sickness absence among primary school pupils.

Vanneste et al. [7,8] have developed an evidence-based approach to manage sickness absence in secondary education. This ‘Medical Advice for Sick reported Students’ (MASS) intervention aims to reduce sickness absence among students through early detection and by providing appropriate care. Students at risk are identified, and then the student, parents and school professionals assess the problem and formulate possible solutions. If the problem is complex or medical, a consultation with a child and youth healthcare physician (CYHP) is scheduled to examine the cause of absenteeism from a biopsychosocial perspective. [7,9] CYHPs are part of the Dutch public health service that supports the healthy development of children. Together, the student, parents, school professionals and CYHP design a plan of action to reduce sickness absence and address underlying causes.

This original version of MASS has been successfully adapted to vocational education through the intervention mapping approach. [10] Parents were found to have a smaller role than in secondary education, therefore, adaptations were made to improve controlling measures and awareness of the problem among students.

There is no structural approach yet to sickness absence in primary schools, even though the habit of missing school often starts as early as primary education. [11,12] We decided to adapt the original version of MASS to primary education because early intervention might prevent the development of the problems causing sickness absence. According to the growing-into-deficit concept. [7,13] it is likely that problems that hinder the development of the child at a young age may not yet cluster into a classifiable diagnosis. Early detection of problems, using sickness absence as a ‘red flag’, might provide opportunities to reduce the burden of problems and halt the progressive clustering of problems into a disease or disorder, thus improving the child’s development and limiting the need for treatment and health costs in the future. [7]

The required adaptation of the original version of MASS was expected to be substantial because of the fundamental differences in the children’s age and in the

schools' organizational structure between primary and secondary education. First, as primary school pupils are younger and less self-sufficient, parents are expected to play a larger role in relation to both the background of sickness absence and reporting sick itself. Second, again because of their age, underlying problems are less likely to have clustered into a classifiable diagnosis. Third, primary schools are often smaller than secondary schools, have fewer teachers per child and are located closer to the child's home. These differences prompt adapting the original version of MASS for primary school (MASS-PS) in a systematic way. Similar to the adjustments for vocational education, we used the intervention mapping approach to provide a theory- and evidence-based blueprint for intervention development. [10,14] The aim of this study was to adapt MASS to primary education, using intervention mapping.

Methods

Intervention mapping (IM) consists of six steps to systematically design, implement and evaluate an intervention for health promotion based on empirical, theoretical and practical knowledge. [14] In this study, we used steps 1 through 4 to design an intervention, Fig. 1 shows an overview of the actions performed. Steps 5 and 6 are reserved for a future study.

Step 1:

The aim of step 1 is to gain insight into the problem of sickness absence in primary education and to determine what is necessary for MASS-PS. This needs assessment was done through establishing a planning group, literature search, interviews with stakeholders, and the development of intervention goals and a logic model of the problem.

The *planning group* was created to plan the intervention mapping and perform the theoretical steps needed to develop the intervention.

For the *literature search* we used the search engines of Pubmed and EBSCOHost. We searched for literature, including grey literature such as government reports, about school absenteeism or sickness absence in primary education, MASS or other sickness absence interventions in schools, and interventions that address general school absenteeism in primary education. The search terms we used were different combinations of: 'Attendance', 'Absenteeism', 'Sickness Absence', 'Sick Leave', 'MASS', 'Medical Advice for Sick-reported Students', 'School', 'Education', 'Primary', 'Elementary', 'Pupil' and 'Student'.

To examine *stakeholders' views* on causes of sickness absence and necessary improvements for an approach to sickness absence, six semi-structured focus group interviews were held, involving 27 participants from two regions in the Netherlands. The participants represented the stakeholders that are directly involved in addressing sickness absence of primary school children: five parents, five primary school principals, three special needs coordinators and two teachers, as well as seven child and youth healthcare professionals and five school attendance officers. We use the term parents for all primary caregivers of the child, including single parents and guardians. The parents had two or more children in primary education. Most school professionals had over 10 years of experience working in primary schools. The experience of the CHYP varied between less than five years and more than twenty years' experience. The school attendance officers generally had the least experience of working with primary school pupils, however they, and the CYHPs, had experience working with MASS in secondary and vocational education. The planning group combined the gathered information to determine intervention *goals* and create the *logic model of the problem*. The latter describes the behavioural and environmental determinants of sickness absence.

Step 2:

To determine change objectives for MASS-PS, the planning group developed the *logic model of change* based on the results from step 1. This model describes which behaviour or environmental factors need to change to achieve the goal of the intervention.

Step 3:

The planning group chose the theoretical basis and practical strategies to achieve the desired behavioural change described in step 2. When the previous IM steps showed different requirements for primary schools compared to secondary schools, adjustments to the original MASS were made.

Step 4:

Based on the practical strategies of the previous step, practical support materials were developed by the planning group and were pre-tested during two separate meetings with stakeholders.

Figure 1. Overview of the aims, goals, procedures and consulted stakeholders during the intervention mapping process used to develop the MASS-PS intervention.

Overarching aims	Sub-aims	Procedures	Stakeholders involved
Step 1: needs assessment			
To determine the needs for MASS-PS	Establishing a planning group	The group consisted of all authors, each with extensive knowledge of the MASS intervention and specialised knowledge: 3 Child and youth healthcare physicians & researchers 1 psychologist & researcher specialised in employee sickness absence 1 epidemiologist specialised in child & youth public health	Child and youth healthcare physicians
	Exploring the cause of the problem, possible solutions and key elements of MASS,	Reviewed literature (EP)	-
	Exploring the cause of the problem and determine the current approach to sickness absence by directly involved stakeholders	Semi-structured group interviews Were held with directly involved stakeholders	Parents School professionals (principal, special needs coordinator and teacher) Child and youth healthcare physicians School attendance officers
	Stating goals for the intervention based on the preceding steps.	Designed by EP and discussed in the planning group	-
	Designing a logic model of the problem	Designed by EP and discussed in the planning group	-
Step 2: To determine change objectives for MASS-PS			
To determine change objectives for MASS in primary education	Designing a logic model of change	Designed by EP and discussed in the planning group	-
Step 3: Developing a plan for MASS-PS			
To develop a theoretical basis for MASS in primary education and determine program components.	Identifying and choosing a theoretical methods that can influence change	Selected by EP and AR and then discussed in the planning group	-
	Designing practical strategies for applying the theoretical model	Determined in the planning group	-
Step 4: MASS-PS			
To develop the support materials for MASS in primary education and pretest the intervention materials.	Developing the needed materials and design documents	Created by EP and YV, adjusted based on feedback from the planning group	-
	Pretest 1 - Consulting stakeholder representatives to refine materials and documents.	A stakeholder work group was created and a meeting was held. Materials were adjusted by the planning group after feedback in this meeting.	Representatives of: regional primary school cooperatives, Municipalities, Child and youth healthcare organisations, School attendance offices Parents
	Pretest 2- Consulting intended programme participants to test materials and documents.	A meeting was held with representatives of directly involved stakeholder groups (4 primary school principals, 1 special needs coordinator, 4 Child and youth healthcare professionals & 6 School attendance officers)	Primary school principals, Primary school special needs coordinators, Child and youth healthcare physicians School attendance officers
	Finalising materials	Adjusted by EP and discussed in the planning group	-

MASS-PS: Medical advice for sick-reported pupils for primary school

Results

Step 1: Needs assessment

The needs assessment consisted of five aspects: creating a planning group, exploring the literature, interviewing stakeholders, determining goals, and creating a logic model of the problem.

Creating a planning group

The planning group was created and consisted of all of the authors, who had diverse expertise on sickness absence and the original MASS intervention.

Exploring the literature

Few studies specifically target sickness absence in primary education. Therefore, we also searched the literature on general school absenteeism in primary education and literature on sickness absence in secondary education. We examined both the problems causing absenteeism and the solutions described.

The literature on the problems associated with general school absenteeism in primary education revealed the many different factors related to absenteeism, which are often categorized into school environment, home environment and personal factors. [2,15,16] Focusing on the school environment in primary education, the factors found were: school climate, bullying, school engagement and the connection between teacher and child. [2, 15-19] For the home environment, parental involvement, parent's understanding of the importance of school attendance, mental illness and substance abuse were considered important, as well as conflict, frequent relocation, broken families, language barriers, poverty and low socioeconomic status. [2, 15-17, 19] Personal factors, such as a child's mental problems, can hinder school attendance, while, enjoying school and having a higher academic achievement seemed to boost school attendance. [2,15, 16, 19] A pilot study by Vanneste et al. [7] focused on sickness absence in primary education and found that problems in the home environment were associated with extensive sickness absence (ESA) of more than nine school days or more than four periods of sickness absence. An episode is a separate instance when a pupil is reported sick. One episode lasts at least half of the school day. Factors that related to ESA in the pilot study were: lack of motivation, incomplete families, families with financial problems, and a mother with a low educational level or without a paid job. [7]

The literature on problems associated with sickness absence in secondary education revealed causes such as temporary or chronic diseases, injury, and physical and mental health problems. Sickness absence also relates to characteristics of the home

environment such as broken families or a low social economic status, as well as an unhealthy lifestyle, risk behaviour, problems at school and an easy attitude towards reporting a child as sick. [1,7,8,20]

The literature on solutions to sickness absence among children was absent to our knowledge, except for the original MASS intervention. [7] This intervention focuses specifically on sickness absence and has a collective and personalized approach. [8] Key elements of MASS [21] are:

- MASS is included in the official school absenteeism protocol.
- Actions are based on shared responsibility and shared decision-making.
- The basis for communication is a caring attitude rather than control.
- School professionals discuss the absenteeism with the parents and student before any further action is planned.
- A fixed threshold for 'extensive sickness absence' is used to target the children at risk, in secondary education this was operationalised as more than 7 consecutive days of sickness absence or more than 3 periods in 4 months.
- The CYHP is informed by the school about the situation before planning a consultation with the student and parents.
- During the consultation, the CYHP analyses underlying problems from a biopsychosocial perspective, creates an action plan and monitors any planned healthcare steps.
- School professionals implement and monitor the action plan.

The literature on solutions to general school absenteeism revealed factors that have been successful: effective communication between students, parents and teachers; systematic recording and monitoring of absenteeism; assessment of risk and protective factors by professionals; and referring chronically absent students to the right expert. [16,18] Addressing the underlying problems of school absenteeism requires a collaborative effort from the school and social and medical services.

The literature on school absenteeism frequently refers to a three-tiered response model created by Kearney and Graczyk, which parallels stages of prevention. [18] Tier 1 efforts are targeted at all students, Tier 2 actions target students at risk, and Tier 3 actions target students who are chronically absent. Key elements are prevention, regular monitoring, early identification of Tier 2 students, and a functional assessment to determine appropriate interventions. The original MASS intervention follows these three tiers with a collective approach (Tier 1) and a more personalized approach when students are more at risk (Tiers 2 and 3). In primary education, Cook et al. developed an intervention targeting truancy based on the three-tiered response

model. [16] They found communication between parents and teachers to be crucial for Tier 1. They gave teachers a leading role in Tier 2 and encouraged referral to experts in Tier 3.

Stakeholder interviews

Six semi-structured focus group interviews were held with five primary school principals, four special needs coordinators, two teachers, six CYHPs and one nurse, five school attendance officers and five parents of primary school children. The full results can be found in a separate article. [22]

The main message was that all stakeholders believed the child's well-being is very important. The awareness of sickness absence as a threat to the child's well-being was low among school professionals and parents before the interviews. In contrast, school attendance officers and CYHP, who had all worked with MASS, were adamant about the importance of school attendance. School professionals often registered absence. However, they only occasionally used planned steps to address the absence and based the identification of problematic sickness absence on gut-feeling. The stakeholders believed that the causes of sickness absence could be categorized as medical problems, problems at home, problems at school or a combination. Because of the young age of the child, the parents make the decision to report the child as sick. Parents felt helpless about school-related problems. In contrast, school professionals felt capable of addressing school-related problems but regarded problems at home as outside their influence. Additionally, school professionals and school attendance officers often did not see a way to influence medical problems, while CYHPs did. The school professionals preferred to work with experts whom they knew and trusted, without explicitly considering if another professional had more appropriate qualifications.

Solutions. Stakeholders felt the need for a clearly structured approach:

- Registration and monitoring of sickness absence of all pupils.
- Identifying pupils with problematic sickness absence, either exceeding a threshold or because the teacher noticed problematic absence.
- Exploring the cause of the absence. In the first instance, the teacher talks to the parents. The participants agreed that a caring, rather than controlling, attitude is crucial. When necessary, the special needs coordinator or principals, who often know both the parents and the child, can support the teacher and parents in these conversations. When the parents and school require further assistance, an additional expert can be included. The two most important experts mentioned were the CYHP and the social worker. The CYHP examines the complex problem of sickness absence from biological, psychological and social angles, advises on re-integration, and

can communicate with, or refer the child to psychological or health care. The stakeholders believed social workers could be needed when problems clearly originated in the home environment. In that case, the parents and the social worker were thought capable of starting to address those problems directly, and a broad biopsychosocial analysis was not considered necessary.

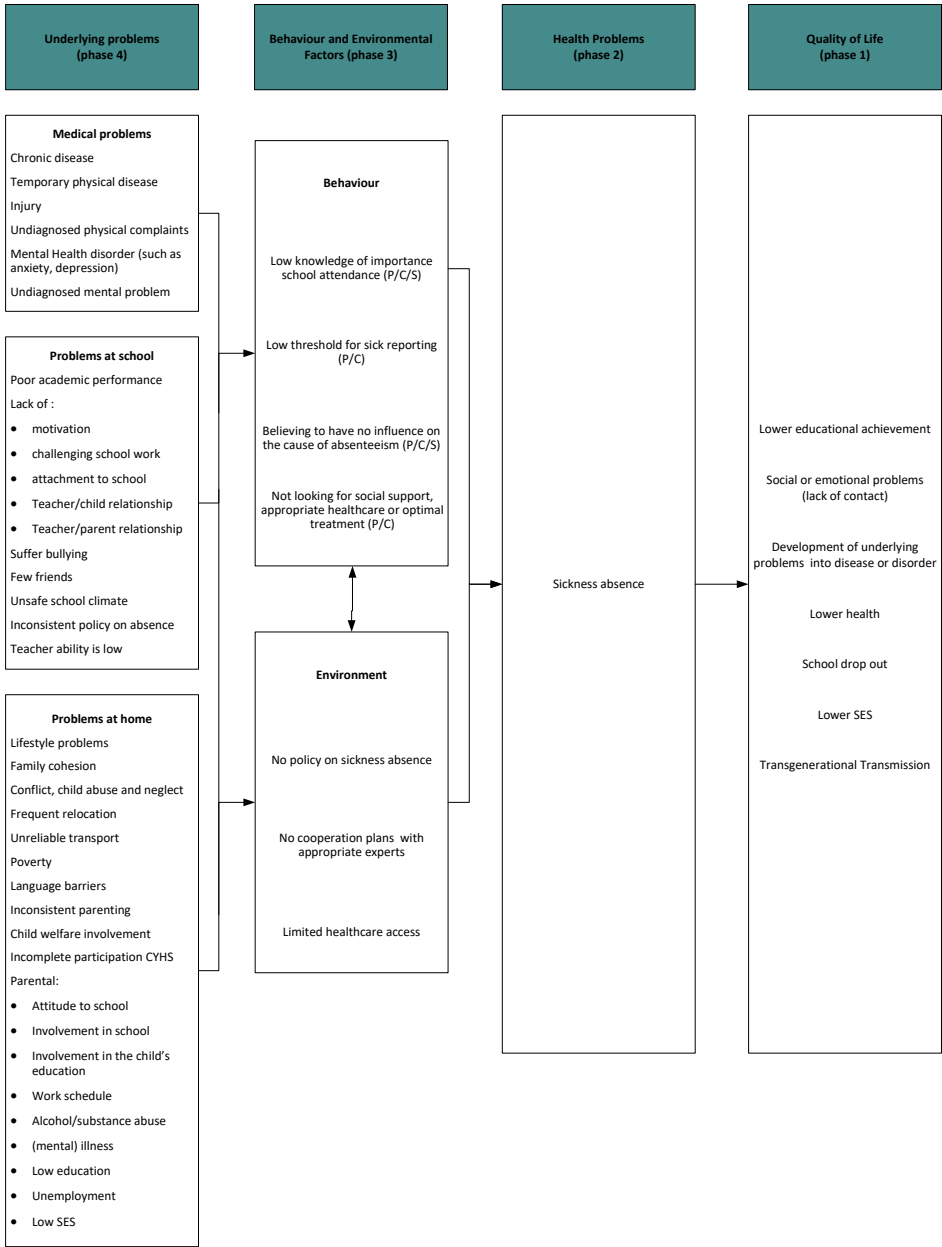
- Addressing underlying problems – tailored to the individual child’s context and in collaboration between the school and parents.
- Reducing the effects of absenteeism on education, for example through catch-up lessons.
- Reducing future absence – often through improving the relationship between school professionals and parents.

Planning for early intervention. Because of the importance of early intervention expressed both in the literature and among stakeholders, the planning group decided to lower the threshold for ESA. The threshold used in the pilot study of more than 9 days or more than four periods in a school year and the threshold in MASS for secondary education, of more than seven consecutive days or more than three periods in four months, were both considered to be too high to ensure early intervention in primary education. [7] It was deemed more important to include pupils with potential problematic absence, than to keep out pupils without problems, as the tailored intervention was not expected to have negative side-effects. Based on the stakeholders’ ideas, we chose a threshold of more than 6 days or more than 3 periods of sickness absence in a school year. Moreover, to allow for early action, the planning group agreed that parents and teachers should be able to trigger action when they expect the sickness absence to be problematic, even if the threshold has not (yet) been met.

Goals for the intervention. Based on the needs assessment, we formulated two goals for MASS-PS: firstly, to reduce sickness absence among pupils; secondly, to be able to use sickness absence as a red flag for underlying physical, psychological and/or social problems.

Logic model of the problem. The results of the literature search and stakeholder interviews were combined to create a logic model of the problem (Figure 2). When creating the model, we started with sickness absence as the health problem (known as phase 2 in intervention mapping) reducing the quality of life, for example through lower educational achievement (phase 1). Sickness absence in turn is assumed to be influenced by behavioural factors and environmental factors (phase 3). In phase 4 we listed the underlying problems, divided into three categories following the thought process of stakeholders and the literature: medical, school and home problems.

Figure 2. The logic model of the problem for sickness absence in primary education.



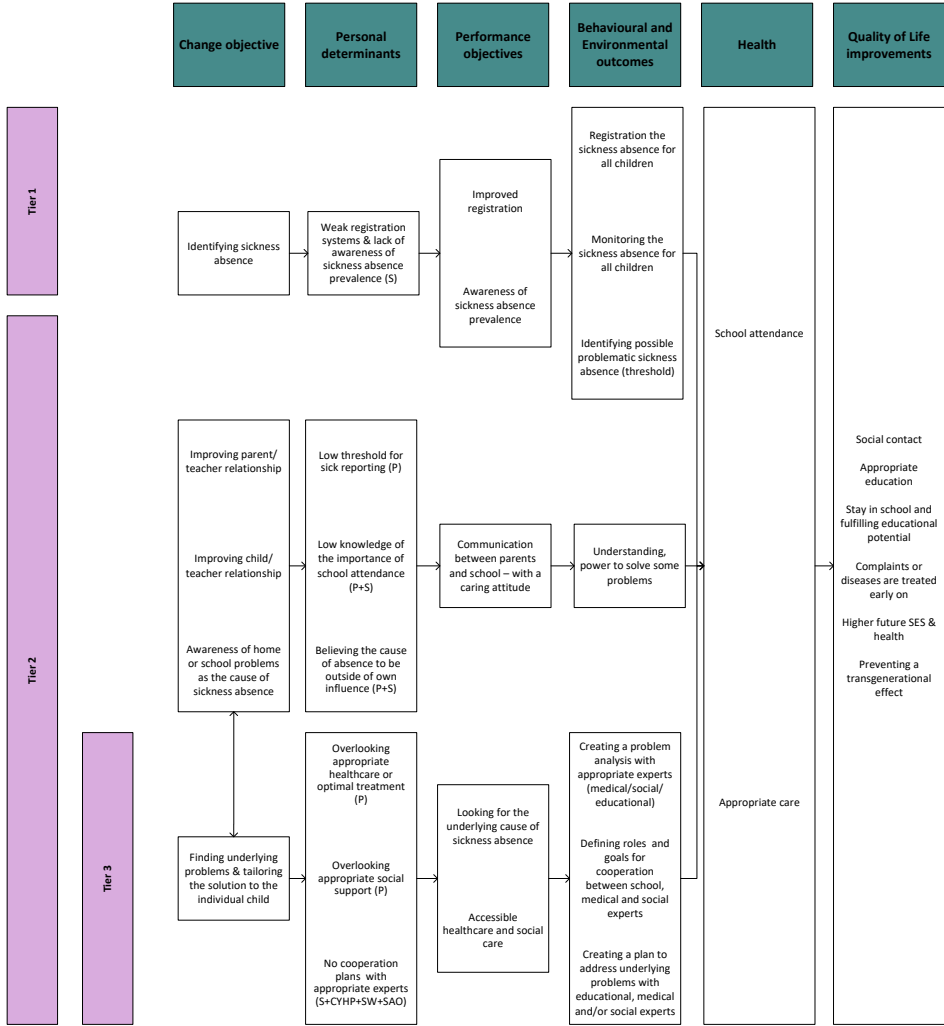
P: parents, C: child, S: school

Step 2: The logic model of change

The logic model of change was composed based on the objectives for MASS-PS in

addition to the environment and behaviours influencing sickness absence, according to the logic model of the problem (Figure 3).

Figure 3. The logic model of change for sickness absence in primary education.



CYHP: child and youth healthcare physician, P: parents, S: school, SAO: school attendance officer, SES: Social Economic Status, SW: social worker.

Step 3: Developing a plan for MASS-PS: theoretical framework and strategies

The I-change theory was used as a framework to define the behavioural changes of the stakeholders needed to achieve the intervention objectives. [23] According to

this model, behaviour is influenced by ability and motivation. Motivational factors are attitude, social influence and self-efficacy, which can be influenced by awareness. All these determinants are assumed to be important for stakeholder behaviour in relation to addressing sickness absence in primary schools.

The theoretical determinants were used to develop strategies and practical applications for each of the key elements of MASS, which can be found in supplementary materials. The focus was put on creating awareness, as the topic of sickness absence as a problem is relatively new to primary schools, and awareness is a crucial step to influence attitude, social influence and self-efficacy.

Step 4: Developing MASS-PS

Developing materials

To visualize MASS-PS we developed a flowchart for professionals to show the stages and their order and who can be involved. Additionally, the threshold for possible problematic sickness absence is shown, as well as advice on communication.

We developed two presentations to share MASS-PS with stakeholders and the participating professionals. The presentations explain why sickness absence needs to be addressed, how MASS-PS was developed, and which steps need to be taken to start using MASS-PS.

While developing the materials, our focus was on school professionals because they start the process by registering and identifying problematic sickness absences. They contact the parents and experts and monitor the absence. Therefore, it is important for school professionals to know what to do and why. We created the role of ‘attendance coordinator’ to coordinate the implementation of MASS-PS process in a school. The principal assigned this role to one of the staff members, most often the special needs coordinator.

After the initial presentation for all professionals, the participating schools were visited by a member of the planning group for an explanatory meeting, for which a topic guide was created. The main topics were: the importance of addressing sickness absence, registration, the threshold for ESA, the use of a caring attitude, reasons for referrals to experts and contact information for local experts. Each of these topics was also explained in a leaflet made for the attendance coordinators.

To communicate MASS-PS as a school policy to parents, we created information for the school’s website and newsletter.

Finally, materials from the original MASS were used for the CYHP. All participating child and youth healthcare physicians were trained in MASS consultations.

Pretest 1

To pre-test the developed MASS-PS prototype, we created a group of stakeholder’s representatives. The group was formed through invitations from the regional health office where two planning group members worked at the time. The directors of the three regional school partnerships for primary education in the area participated, as well as the local child and youth healthcare services manager, two representatives of the 18 municipalities in the region, a parent and a CYHP from a different region. The planning group shared the developed materials during a two-hour meeting. The group of representatives emphasized both the importance of registration and its current deficiencies. They believed that the special needs coordinator should be the one to identify and monitor sickness absence, while the teacher is the first one to contact the parents. They agreed that the problem analysis should not be hastily done by the school alone and suggested clarifying the flowchart and adding the role of the school attendance officer to the end. All suggested adjustments were made to MASS-PS.

Pretest 2

One month after the first pre-test, a 1.5-hour meeting was planned at the regional health office, and end-users were invited. The meeting was attended by four primary school principals, one special needs coordinator, four CYHPs and six school attendance officers. Additionally, the members of the first pre-test group and the planning group also attended this meeting. The adjusted version of MASS-PS was presented and discussed in separate groups. The participants regarded the intervention as logical and feasible, and no new adjustments were made to the flowchart.

Finalized materials

The finalized flowchart of MASS-PS is shown in figure 4.

Figure 4. Flowchart of finalized intervention MASS-PS. (The Netherlands, 2021)

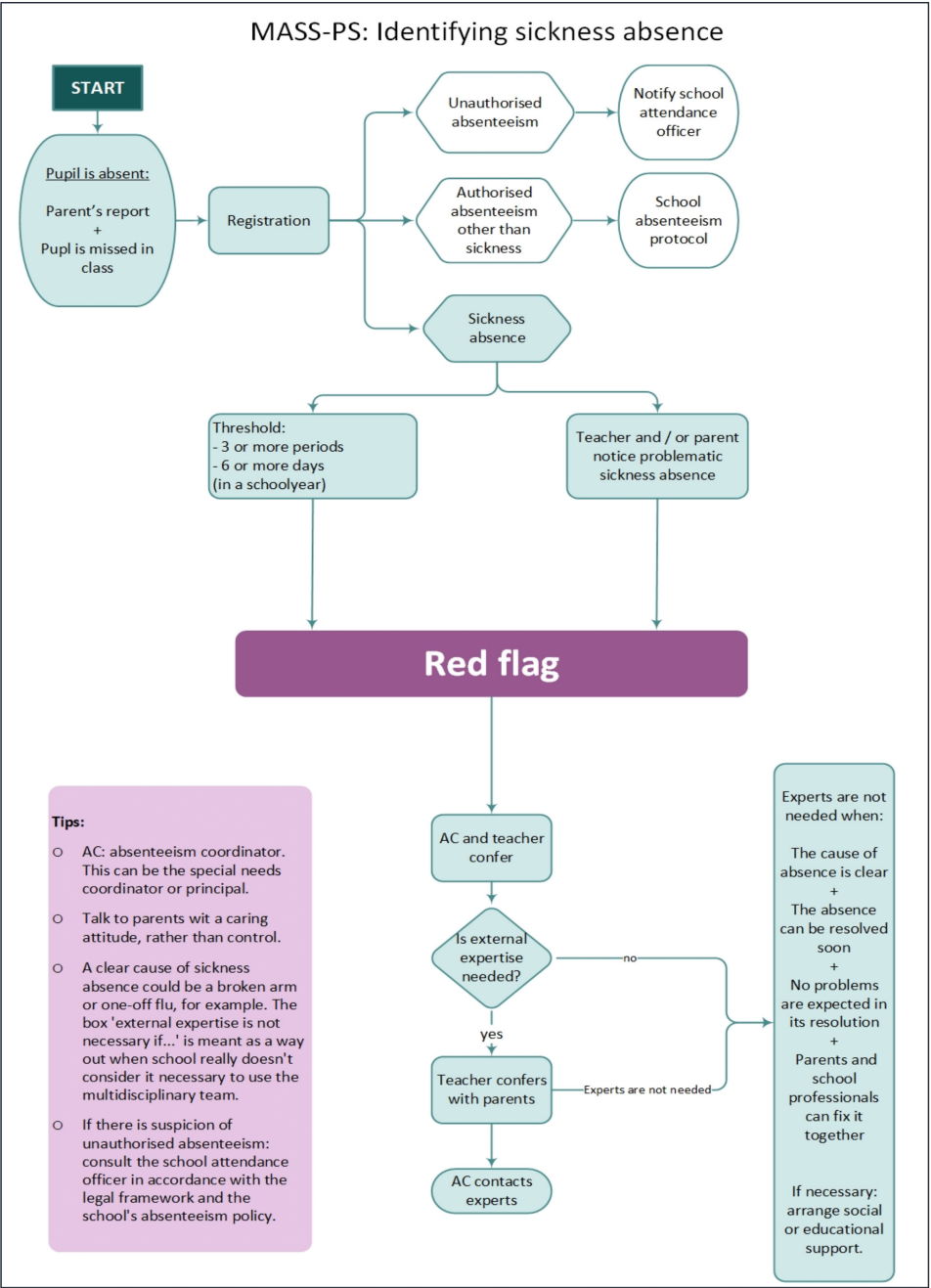
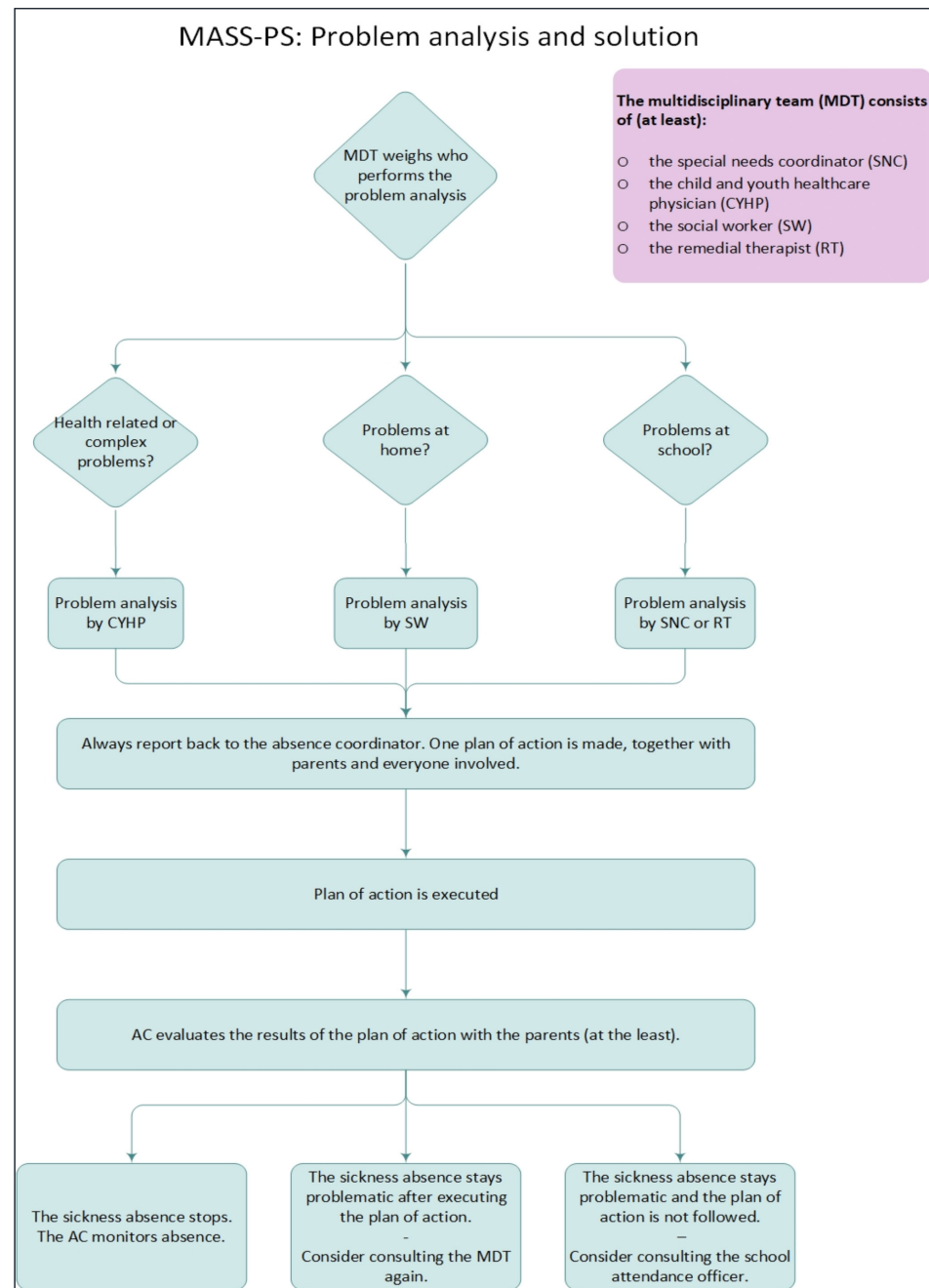


Figure 4. Continued.



Discussion

In this study, the original MASS intervention for addressing sickness absence was adapted to primary schools using steps 1 through 4 of the intervention mapping approach. [14] The main modifications were the adjustment of the ESA threshold that was used to identify the target group of children, the consultation between the teacher and the attendance coordinator, and the option of referral to the social worker or remedial educationalist as experts in addition to the CYHP.

The threshold used to identify problematic sickness absence in secondary schools was lowered to be able to focus on prevention. Early intervention is necessary to prevent underlying problems from clustering into a disease or disorder and to halt the formation of the habit of missing school. Therefore, sickness absence among primary school children should be seen as a red flag, signalling the need to identify underlying problems and tackle these. Both the sickness absence and the underlying problems impede the development of the child. [5,7]

Teachers, special needs coordinators and principals of primary schools often know the parents. In the Netherlands, parents drop young children off and pick them up at school and also the smaller size of the schools allows for getting to know each other more easily through school activities, as compared to secondary schools where MASS has already been implemented. This implies that all school professionals could have valuable information about the absent child and, therefore, a consultation stage for school professionals was added to MASS. In addition to sharing information about the child, it allows school professionals to share their expertise and confer on their next actions. MASS-PS stresses the parents' role because the home environment has been shown to have a major impact on attendance and parents are key to the solution. [7] Additionally, due to the child's age, the parents make most of the decisions regarding appropriate care and reporting their child as sick. Nurturing a good relationship between the parents and the school is thus important to prevent and address sickness absence. Additionally, it has also been shown to improve the child's academic achievement and mental health. [24-26]

Like the original, MASS-PS is offered collectively and provides personalized care for pupils at risk. The actions meant for all children, e.g. awareness of sickness absence as a problem, communication strategies, registration and identification, could be classified as tier 1 in terms of Kearney and Graczyk's intervention model to address school absenteeism. [18] The following stages, e.g. problem analysis and solutions, are tailored to the needs of individual children, which may be categorized as tier 2 or 3 interventions. Kearney and Graczyk recently advised the integration of

multiple domains of functioning into their three-tiered intervention model, as school absenteeism generally requires a broad perspective. [27] MASS-PS focusses on the school, home and medical domains and incorporates experts in each of these domains, showing that MASS-PS is in line with the current literature on school absenteeism interventions.

Methodological strengths and limitations

We contemplated several models to adapt MASS to primary schools and their pupils and found that intervention mapping fit best as it led to an in-depth analysis of sickness absence in primary education. [14] Applied Intervention Mapping (AIM), a simplified version of intervention mapping that has been used in the educational setting before, was considered, however, we decided a more in-depth analysis was required because of the fundamental differences between primary and secondary schools. [27]

The literature search performed to feed the logic model of the problem was not a systematic literature review and may thus have missed some relevant research. However, as research on sickness absence among primary school pupils is extremely scarce, it seems unlikely that relevant articles were missed. We used grey literature to incorporate practice-based information.

For the needs assessment we interviewed a large number of directly involved stakeholders, thereby strengthening our practical knowledge. We chose to focus on the stakeholders who have a practical role in addressing sickness absence, rather than those not directly involved, e.g. educational, health care or governmental policymakers. Policymakers were included in the pre-tests to ensure the fit of MASS-PS on a policy level as well as a practical level.

The I-change theory used has been criticized for its focus on conscious behaviour alone. [29] There might be additional opportunities to reduce sickness absence if subconscious behaviour is targeted. For example, parents and teachers might automatically communicate more easily when they know each other better. This might be promoted by teacher home visits, as has been used previously to address truancy. [17]

MASS-PS was tested in two pre-test settings to improve the design. In the second pre-test, no new changes were made to the design, suggesting that MASS-PS is well-suited to the end-users.

Conclusions

Steps 1 through 4 of intervention mapping were successfully used to adapt MASS to primary schools. This was done by adjusting the threshold for ESA, more frequent consultations between teacher and attendance coordinator, and adding the social worker and remedial educationalist as experts along with the child and youth healthcare physician. MASS-PS was well-accepted by professionals in the pre-tests and is ready for the next steps: planning the implementation and evaluation.

The developed intervention, MASS-PS, can guide school personnel, parents and healthcare professionals and social workers in their combined efforts to address sickness absence among children. By using ESA as a red flag, underlying problems can be addressed, and future health or educational problems may be prevented.

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PART II

Implementation and evaluation of MASS-PS

CHAPTER

5

Process Evaluation of the Child and Youth Healthcare Intervention 'Medical Advice for Sick-Reported Students in Primary School' (MASS-PS)

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Abstract

Background

School attendance is crucial for the development of a child. Sickness absence is the most common type of absenteeism and can be a red flag for underlying problems. To address sickness absence, the intervention Medical Advice for Sick-reported Students for Primary School (MASS-PS) was recently developed. It targets children at risk and is a school-based child and youth health care intervention. The present study is a process evaluation of the intervention. MASS-PS was implemented and evaluated in 29 schools in the West-Brabant region of the Netherlands, during three school years (2017–2020).

Methods

Attendance coordinators (ACs) from the different schools were interviewed in six focus group interviews as well as in over 200 individual conversations, of which logbooks were kept. Content analysis was used based on a framework of implementation elements.

Results

During the first year of the study, the uptake was low. Changes were made by the project group to improve the uptake. The ACs generally considered the MASS-PS as compatible and relevant, but suggested improvements by adding a medical consultation function with a child and youth healthcare physician and increasing the threshold for selecting children at risk. They saw several personal benefits, although time was necessary to learn to use the intervention. An organisational barrier was the lack of teaching staff. A strength in the organisational structure was the appointment of ACs. A major event in the sociological structure was the COVID-19 pandemic. ACs felt that the intervention helped them keep track of sickness absence during the pandemic.

Conclusions

The Medical Advice for Sick-reported Students for Primary School intervention was implemented successfully, and the process evaluation gave insight into possible improvements.

Introduction

Sickness absence among primary school pupils is a public health problem. School attendance is the foundation for learning and developing educational, social, and health-related skills. [1–4] Sickness absence is the most common reason for absenteeism and is explained by psychological, social, and health problems and can lead to lower educational achievement, as well as school drop-out. [5–7]

For students in secondary education, an effective approach to address sickness absence was developed by a child and youth healthcare (CYH) organisation, in close cooperation with education providers. [6] This intervention, called 'Medical Advice for Sick-reported Students' (MASS), aims to reduce sickness absence and improve child well-being. It has recently been adapted to primary schools (PS). [8] MASS-PS connects primary education and CYH services to identify and support children with extensive sickness absence (ESA). In MASS-PS, the parents, teacher and, if indicated, CYH physician discuss aspects of the pupil's sickness absence and design and monitor a management plan to optimise health and maximise participation in school activities. The CYH physician gives medical advice from a biopsychosocial perspective in accordance with the age and cognitive and psychosocial development of the child. [9] An overview of key elements in MASS-PS is shown in Figure 1, a full description will be published elsewhere.

Child and youth health care services offer individual and community-based preventive healthcare in the Netherlands. [9,10] Based on the Public Health Act, CYH professionals promote and protect the physical and mental health of all children and monitor their development. In addition to this basic care, CYH offers specific interventions to reach children with an increased risk for health problems and reduced participation. [11] To identify children at risk, CYH services either reach out to parents and children directly or collaborate with other fields, such as education providers. The advantage of a school-based health intervention is the wide reach and frequent contact with children that schools offer. [12,13] However, it can be challenging to develop a feasible school-based health intervention, as the primary focus of teachers is on education, not health. It is important, therefore, to ensure user goals and intervention goals align, which can be improved by including user views in the design of the intervention. [14,15]

The development of MASS specifically for primary school children was guided by intervention mapping. [8] Intervention mapping is a six-step process to structure the development of health-promoting interventions and incorporates stakeholders' views to increase their usability and feasibility. [16] MASS-PS was shaped in steps 1–4,

after which the intervention was implemented (step 5). Step 6 covers the process and effect evaluation of the intervention.

The aim of the present study is the process evaluation of MASS-PS with a focus on its implementation. Fleuren et al. described elements that can affect implementation success at four levels (Table 1). [17] These elements were used as a framework to analyse the implementation of MASS-PS in schools. This study aims to provide insight into the usability of MASS-PS and suggests possible improvements. Additionally, it aims to point at challenges while implementing a systematically planned, school-based, CYH intervention.

Figure 1. Key elements of the MASS-PS intervention.

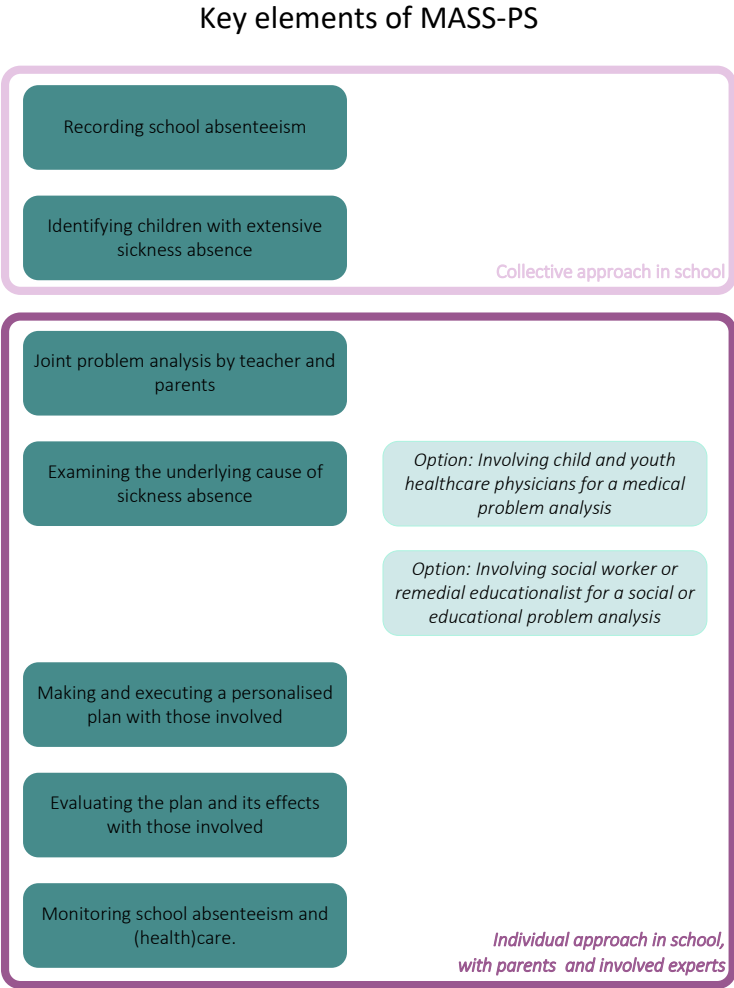


Table 1. Overview of the elements of implementation

Elements Associated with the Innovation	
Procedural clarity	Compatibility
Correctness	Observability
Completeness	Relevance for the client
Complexity	
Elements associated with the adopting person (user)	
Personal benefits/drawbacks	Descriptive norm
Outcome expectations	Subjective norm
Professional obligation	Self-efficacy
Client/patient cooperation	Awareness of content of innovation
Social support	
Elements associated with the organisation	
Formal arrangements by management	Material resources and facilities
Replacement when staff leave	Coordinator
Staff capacity	Unsettled organisation
Financial resources	Information accessible about use of innovation
Time available	Performance feedback
Elements associated with the socio-political context	
Legislation and regulations	

Materials and Methods

Setting

MASS-PS was developed in the period from January 2017 to August 2017 and pre-tested for feasibility among stakeholders in September 2017 [8] The evaluation was carried out from September 2017 to August 2020.

The present study was part of a larger research project exploring sickness absence in primary education. For that research project, 23 out of 265 primary schools in the region of West-Brabant in the Netherlands were selected for participation, 16 mainstream primary schools were selected at random and all seven special schools for primary education (SSPE) were approached. SSPEs are schools for children with mild learning difficulties, behavioural problems, and parenting problems, but they are not classified as special needs education in the Netherlands. Special needs education schools were excluded because the organisational structure is very different from regular education. Of the 23 selected schools, 10 mainstream primary schools and six SSPE agreed to participate and implement MASS-PS.

Since the uptake of the intervention in 2017/2018 was low, more schools were recruited in September 2018 by sending an invitation email to all schools in the region. At this stage, a further 14 schools agreed to participate in the study. The participating schools had between 64 and 495 pupils (median 210). Out of the 29 schools, 13 were located in an urban environment. The participating schools appointed an attendance coordinator (AC) to co-ordinate the implementation and use of MASS-PS.

Reach of MASS-PS

To determine the number of children reached by the intervention, the ACs provided data for the school years 2018–2019 and 2019–2020 on the number of children identified and referred to external experts in the context of MASS-PS. Because of the low uptake of the intervention, the ACs of the original 15 schools did not supply data for 2017–2018.

Interviews and Logbooks

Both focus group interview data and logbook data were collected. This method allowed for data triangulation between data obtained in a setting led by the researcher and those from a setting led by the users. To gain insight into the usability of MASS-PS, focus group interviews were held with the ACs of the participating schools, enabling them to share their own experiences and react to the experiences in other schools. Each school year (2017–2018, 2018–2019, and 2019–2020), two group interviews were held, with three to six participants in order to achieve data saturation. All ACs were invited to the focus groups and joined based on availability, resulting in a different grouping every year. The interviews were conducted by the first researcher and a research assistant and lasted an hour on average. The first four interviews were held face-to-face, while the last two were online due to restrictions from the COVID-19 pandemic. Topic guides for the interviews focussed on the adopters' views on MASS-PS, whether the intervention was used as planned, and what factors enabled or impeded the intended use. The interviews were recorded and transcribed verbatim.

In addition to the focus group interviews, researcher E.P. maintained logs when she visited the schools every one to three months in 2018–2019 and 2019–2020 to discuss the use of MASS-PS with the AC—an action originally decided upon by the project group to improve the implementation. Logs held notes from more than 200 conversations. While the interviews were led by researcher E.P., based on topic guides, the individual meetings were led by the individual ACs, while E.P. made notes, the topics were based on the ACs' recent experiences and events.

Analysis

The focus group interviews and logs were analysed through content analysis using the elements described in Table 1 as a framework. Comments were coded based on each of the elements by two researchers. In case of disagreement, all four authors discussed the coding until consensus was reached. All research team members read all data and participated in discussion of the results at several points in time. The research team members varied regarding their expertise in child and youth healthcare, school absenteeism, return to work, psychology social work, and epidemiology.

Results

MASS-PS was used by the participating schools between September 2017 and August 2020. In the first school year, uptake of the intervention was low. Therefore, the research team decided on new actions to support implementation, based on the first focus group interviews and a stakeholder advisory group. Identification software was created, the threshold for ESA was adjusted, and regular consultations between author EP and each AC were held monthly. These consultations were designed to improve the organisation of MASS-PS in schools, but it quickly became clear that the ACs felt a need for medical advice, which E.P., as a CYH physician, could also provide. The logs of these regular consultation meetings, as well as the focus group interviews, resulted in a large amount of data on the implementation of MASS-PS and on the reach of the intervention during the research period.

Participation and Reach

Of the 29 schools that applied for participation, 20 participated during the entire research period. While using MASS-PS, they identified 1220 pupils with ESA in 2018–2020, spoke to 489 parents (40%) about the pupils' sickness absence and referred 136 pupils to external experts.

Table 2. Quotes from attendance coordinators sorted by the elements of implementation.

Theme	Element	Quotes from Attendance Coordinators
The innovation	Procedural clarity	"This system distinctly shows how far everyone's responsibility goes. The collaboration is clear-cut." —2019
	Correctness	"We wonder if the criteria are too strict? (...) Actually, we know who the children with problems are. It's still good to do, although I think we are lucky in our village as problems aren't that big here." —2018
	Completeness	"I always do it with you [meaning researcher & child and youth health care physician EP], we discuss the identified children and then get the ball rolling." —2020
	Complexity	"One teacher categorises a dentist visit as a doctor's visit, the other calls it other authorised absence, so we changed the options with [researcher] EP. Less choice in the registration system makes it easier to pick the right category." —2020
	Compatibility	"I've noticed that our teachers find it difficult to talk to parents about absenteeism. I have to remind them (...) not to actually say 'your child is absent far too often'." —2019
	Compatibility	"For our school, identifying absenteeism every six to eight weeks is fitting. (...) With the possibility of more frequent checks when there are signs of increased absenteeism, but that's up to the school to decide." —2020
	Observability	"Teachers often think it's authorised absenteeism, because they fill in that it's this or that' (...) When you ask parents, however, it may be confirmed, or it may be very different than what we thought. Knowing the problem makes it easy to tackle." —2019
	Relevance for the client	"You tackle the problem earlier (...), before, a child had 40 periods of absence, but now, they've already been identified. That makes it easier to involve the teacher, and for the teacher to involve the parents. That's an improvement."
	Relevance for the client	"I believe that parents don't recognise the necessity as of yet' Actually, I've noticed a difference between younger and older groups. (...) Parents are more focussed on absenteeism of their child in group 8, than in group 2' And the teacher does the same of course, saying 'this can't happen next year'." —Two ACs 2019
	Personal benefits/drawbacks	"The whole trajectory (...) has given me insights, about talking to parents and even children. (...) I really appreciate that. It provides a kind of norm, a criterion that shows what is normal and what is excessive." —2020
The user	Personal benefits/drawbacks	"For me, it's that you're made aware so much earlier. The children are noticed so much sooner and you can start the conversation with parents in an earlier stage." —2020
	Personal benefits/drawbacks	"Sometimes, you're kind of relieved that a few pupils are ill, it's quiet." —2018
	Personal benefits/drawbacks	

Table 2. Continued.

Theme	Element	Quotes from Attendance Coordinators
	Outcome expectations	Minor remarks
	Professional obligation	"Teachers don't see it as their job (...), they teach whoever is in the class. The absenteeism is the parents' responsibility, the teacher is responsible for brushing up the knowledge once the child is back." —Logbook
	Client/patient satisfaction	"When I talk to parents myself, I don't get the impression that they mind. They seem to appreciate that absenteeism is identified and we care about it." —2019
	Client/patient cooperation	"Sickness absence can sometimes seem an easy way to be able to go to a theme park (...), a five-year-old will blurt that out by the way." —Logbook
	Client/patient cooperation	"As soon as we mention the CYHP or nurse, we see a drop in absenteeism. It makes parents think."
	Social support	"What I do notice is some teachers are very enthusiastic and good at it. Some other teachers seem afraid that it will create more work for them, when in fact it doesn't have to." —2018
	Social support	"I am the only SNC on staff, so my communication with the teachers is easy (...). And I can see that they really care too. This was a team decision, because the teachers were also concerned about the children with high levels of absenteeism but we didn't know exactly what to do (...), so MASS-PS is great." —2019
	Descriptive norm	Not mentioned
	Subjective norm	Not mentioned
	Self-efficacy	"I notice that once a teacher had had a few conversations with parents [about absenteeism], they say 'it's easier than we thought'. Especially because you can use MASS, which gives peace of mind. You can hide behind the numbers and don't have to jump to conclusions." —2019
	Awareness of content of innovation	"Word of mouth around the village is that sickness absence is monitored now, and that has an effect on the absenteeism in school." —Logbook
The organisation	Formal ramification by management	"When I look at myself, I have to ensure that I make time to monitor absenteeism. The issues of the day catch up to us all (...) My advice to starting schools would be: make it a recurring item on the agenda." —2020
	Replacement when staff leave	"We need to keep explaining the program to teachers, (...) Because of changes in colleagues, or other changes in the teams, (...), it [the intervention] soon becomes less like the original." —2020
	Staff capacity	"There are a few positions I can't fill, my SNC is absent long-term for example and I'm missing an important link to use this intervention. (...) It changes too much, so I'll try, but no guarantees." —2018
	Financial resources	Not mentioned
	Time available	"It takes time, not that that's bad or anything, time just has to be available." —2018
	Time available	

Table 2. Continued.

Theme	Element	Quotes from Attendance Coordinators
	Material resources and facilities	"We only do it when the researcher comes, that's disappointing isn't it?" —logbook
	Coordinator	"It's a pity that the functionalities of the MASS-PS program aren't implemented in the regular school registration software." —2020
	Unsettled organisation	"We've had a study day in September and I am kind of the driving force behind this intervention in school, together with the principal and special needs coordinators." —2018
	Information accessible about use of innovation	"I'll be honest, it's still something I want to implement properly in my school. It just hasn't happened yet because of all the turbulence and busy schedules." —2018
	Performance feedback	Minor remarks
The socio-political context	Legislation and regulations	Not mentioned
	Pandemic	"What is the role of the GDPR? (...). We're not sure yet what is allowed and what isn't." —2018 "Children with, for example, a serious intestinal disorder, who couldn't be in school before the pandemic, (...) can now log in to the class from home and miss fewer lessons than before." —2020 "Now that the school lockdown is over, the sickness absence is skyrocketing again. You can't blame people because you have to stay home with any symptoms of a cold, but because of that we've lost our grip on sickness absence again." —2020 "After Corona, sickness absence was lower than before. We've had no negative effect on absenteeism. (...) Yes, the occasional pupil goes for a test, is absent for a while, but nothing comes out of it." —2020

Elements Associated with the Intervention

Procedural clarity—The intervention was generally considered to be clear.

Correctness. The main issue with the correctness of the intervention was the threshold for ESA, which was initially set as more than 6 days or more than three periods of sickness absence. During the focus groups held in the first year, ACs shared that over 80% of pupils in some younger classes fit these criteria, defeating the purpose of selecting those most at risk. This demotivated the ACs and teachers, and they reverted back to subjectively selecting those at risk. In 2018, the criteria were changed by the researchers to more than 9 days or more than four periods of sickness absence, which was happily accepted by the ACs.

Some ACs were unsure of how to handle four- and five-year-olds. They suggested that there is more absenteeism because children have to get used to going to school and due to infectious diseases. At four years old, school attendance is not mandatory in the Netherlands, and the ACs suggested that both school personnel and parents consider school attendance to be less important than in later years. All those factors combined to create confusion. One school supplied a solution in a focus group that was well accepted by many other ACs: to consider the process of getting used to school as an integration program, not as sickness absence.

Completeness. Almost all ACs were clear that the intervention needs to include a consultation option with a CYH professional. After children with ESA had been identified, the ACs wanted medical advice from a CYH physician to help them choose which children needed additional help and which external experts should be involved. This option was added to the intervention in 2018 and was universally used by ACs. Nearly every logbook entry included notes on medical advice for individual children. *Complexity.* When a child is absent from school, the teachers could find it difficult to know how to report the absenteeism, according to the ACs. They felt a need to standardise reasons for absenteeism further, for example when a child is going to the hospital: is it sickness absence or a doctor's visit?

ACs revealed that some teachers found the conversation with parents easy because they already have a good relationship with them. Other teachers found it very difficult, and the AC would then have more work encouraging the teacher to have the conversation and supporting them during the conversation. Many ACs considered conversations with parents to be easier because of MASS-PS, as it provided an objective conversation starter: absenteeism numbers.

Compatibility. Generally, the steps of MASS-PS were considered to fit well in the day-to-day work of the schools. However, one reported problem with compatibility was the multidisciplinary team, which only worked if regular meetings were already part of the school structure. Schools without multidisciplinary teams were unable to organise these meetings and, thus, skipped this step. Instead, the AC would choose whether to involve the CYH physician or another external expert, often using the above-mentioned consultation function first.

Other incompatibilities were only mentioned by one or a few ACs, including that the criteria were considered too strict during a flu outbreak, when many children were reported as sick. Additionally, some schools had a lower prevalence of ESA and noticed that no new children would be identified if they checked every month, so they checked every 6 to 8 weeks instead.

Observability. Many ACs recognised improvements in the recording of absenteeism and gained insight into absenteeism patterns in their schools. Many also noticed changes in the prevalence of sickness absence and school personnel's and parents' attitude towards sickness absence. They identified children with ESA and underlying problems that would not have been noticed otherwise.

Relevance for the client. During the focus groups, the ACs reported that communication with the parents had improved with MASS-PS and that earlier action led to easier solutions for the child.

ACs discussed that both school personnel and parents consider school attendance to be less important when a child is young. School absenteeism was thus not always seen as a problem. Several ACs noticed that increasing personal contact about the way absenteeism is reported helped to reduce sickness absence.

Elements Associated with the User

Personal benefits and drawbacks. ACs found that working with MASS-PS increased their work pleasure, due to greater awareness and insight into sickness absence and because they knew what to do with sick-reported pupils. Some happily reported that communication with parents was easier for them, and they noticed a decrease in sickness absence rates.

The main downside they mentioned is that using MASS-PS properly takes time. Every now and then, an AC would half-jokingly say that it can be nice for the teacher and class when a specific child is absent, suggesting that ending absenteeism is not always a benefit in the short term.

Outcome expectations. Only minor remarks were made on this topic, such as one mention that a good school climate, or discussing absenteeism with parents, seems to reduce absenteeism.

Professional obligation. According to several ACs, teachers focus on teaching and do not consider sickness absence as their responsibility.

Client satisfaction. Some positive experiences were reported where parents were happy with the attention.

Client cooperation. A few ACs believed that some parents report their child as sick far too easily, due to a lack of awareness of sickness absence as a problem, especially for four- and five-year-olds.

ACs also expect that some parents will not want to work with external experts, due to negative experiences with the experts' organisations. On the other hand, ACs also mentioned that involvement of the external experts could help parents realise the importance of school attendance.

ACs noticed that improving cooperation with parents takes time. They considered the attitude of care rather than control as helpful, as well as talking about sickness absence and showing parents a visual of the absenteeism.

Social support. One of the biggest challenges the ACs faced was getting all teachers to use MASS-PS. It took time to implement, especially in the larger schools. There were some examples of a lack of support among professionals, and some examples of great support.

Subjective and descriptive norms. Norms were not mentioned by the ACs.

Self-efficacy. Once familiar with MASS-PS, ACs felt able to use it and reported that teachers were getting more confident too. The intervention made the ACs feel more secure when addressing sickness absence.

Knowledge. Only minor remarks were made, for example that ACs used team meetings to inform other school personnel.

Awareness of content. Awareness of the content of, and the need for, MASS-PS was deemed crucial in the interviews, and a clear progression was seen from 2018 to 2020. Awareness among teachers and parents grew, though not in all schools.

Elements Associated with the Organisation

Formal arrangements. Hardly any school had formal arrangements during the research period. The ACs believed it would be necessary to put policy in place for the continued use of MASS-PS. For example, they found it crucial to plan the identification of ESA, otherwise it would only happen when a meeting with the researcher was scheduled. Some ideas for improvement were shared, such as adding absenteeism as a standard topic in parent–teacher meetings or on report cards.

Replacement when staff leave. Changes in the school teams could hinder the use of MASS-PS. Finding new staff was a challenge in some schools and, when found, new staff needed to be trained in the use of MASS-PS.

Staff capacity. Some ACs reported a lack of staff capacity.

Financial resources. Financial resources were not mentioned.

Time available. Setting aside time to identify ESA was one of the biggest challenges for the ACs. Even though they claimed to see a major added value and wanted to do it, they did not find the time because they had so many other activities. MASS-PS was not in the forefront of their minds, and often only the regular meetings with the researcher prompted action. Near the end of the research period, more and more ACs did start to make time for identification, which they managed through careful planning.

Material resources and facilities. It became clear in the first year that identifying ESA was not possible in the current school software and, thus, it took far too much time, according to the ACs. Therefore, software was designed specifically for MASS-PS that uses data from the school registration systems to identify ESA. Downsides of this change were that this new software had a learning curve and needed technical support to keep working. However, the experienced ACs considered it a great addition as it gave them more options and insight into all absenteeism. All agreed that it would be even better if it could be integrated into the school registration systems.

Coordinator. ACs rarely spoke about their own role directly. Their importance shines through other remarks made, such as how they have to encourage teachers to act, how they support teachers in their conversation with parents, and how they ensure that the registration and identification of children with ESA happens.

Unsettled organisation. There was one case of reorganisation which may have hampered implementation.

Information accessible about use of innovation. Only minor remarks were made.

Performance feedback. Performance feedback was not mentioned by the ACs.

Elements Associated with the Socio-Political Context

Legislation and regulations. Some ACs were worried about the introduction of the EU's general data protection regulation (GDPR) in 2018. The GDPR limits information sharing, which could make it more difficult to cooperate with CYH professionals and other external experts. However, the ACs found that information can be shared in different ways, in the interest of the child's well-being.

Pandemic. As the research took place during the outbreak of the COVID-19 pandemic, this topic was also frequently mentioned in 2020. ACs mentioned an increase in sickness absence during the pandemic in some schools and barely any change in others. Some ACs found that MASS-PS helped them discuss corona-related anxiety. ACs also noticed that, because of online lessons, children with serious medical problems were able to participate more than before.

Discussion

The implementation in schools of the newly designed CYH intervention, MASS-PS, was evaluated through qualitative research with six focus group interviews and logbooks of over 200 conversations with ACs.

This process evaluation revealed a generally good implementation among the participating schools, particularly after the first implementation year. The final reach of identifying 1220 pupils with ESA and talking to almost 500 parents about ESA shows that the intervention was implemented and that the ACs had enough experience with the intervention to discuss its usability. The success of MASS-PS could be understood as being driven by elements on all four levels of implementation (intervention, user, organisation, and socio-political context). [17] The perceived positive effect of MASS-PS on children's well-being especially appealed to both ACs and teachers and motivated its continued use. This showed the importance of alignment between user goals and intervention. Barriers were mainly found at the organisational level: participation ended quite frequently because of a change in a key figure (AC or principal), even if it appeared possible to continue if the key figure supported MASS-PS and was able to pass the role on.

Focussing on the elements associated with the *intervention*, an obstacle in the first year was that the threshold for ESA was regarded as far too low by the ACs. A low threshold

defeats the purpose of specifically selecting children at risk, and the selected group will be too large to manage. This demotivates the user as the effect of the intervention is less visible. While identifying problems at an early stage is important for prevention in CYH, selecting children too early hinders implementation, especially in a school setting. Therefore, the researchers raised the threshold, and the new threshold of more than 9 days or more than four periods was happily accepted by the ACs.

For MASS-PS, the medical consultation function with a CYH physician was found to be crucial. While it was originally added by the researchers to improve the organisational side of implementation, it became clear there was a strong need among the ACs for medical advice on what they could do for individual children. The consultation function reinforces the use of MASS-PS and allows schools to have easy access to medical expertise, strengthening mutual understanding and collaboration.

MASS-PS provided teachers with the tools to talk to parents about sickness absence, such as a care perspective rather than a control perspective, and with the objectiveness of absenteeism numbers to start a conversation. Even so, ACs confirmed that talking to parents was regarded as difficult by many teachers, particularly concerning health issues. These difficulties might be related to a larger problem, as research on family involvement in schools suggests the need for improving parent–teacher communication, possibly through changes in teacher training programmes [18,19].

The improved absenteeism registration and the overview of pupils with ESA helped to motivate users. Interestingly, according to ACs, both school personnel and parents seemed to be less worried about ESA when a child is less than six years old, because school is considered to be less important at that age. In contrast, international research and policy makers stress the importance of early childhood education as the basis for success in life. [20] While increased absenteeism due to adjusting to school life or infectious diseases may be expected at that young age, ESA should not be tolerated as it might be a red flag for underlying problems that had not been noticed before the child attended school. [21] Awareness of the importance of school attendance in early childhood should be increased among both parents and teachers. At the level of the *user*, the awareness of a health problem and its link to education was crucial for motivation, especially as teaching is the main focus for school personnel. Teaching does require a caring approach and attention to the child's well-being. With the growing awareness of a link between school absenteeism and well-being, school personnel were more motivated to address absenteeism. MASS-PS includes both a collective approach, through the registration of all absenteeism and a threshold for ESA, and an individual approach when a child is identified to be at risk. This allows ACs and teachers the flexibility to tailor their approach to the child based on their

own expertise, supported by a CYH physician or other experts when necessary. The ACs reported time constraints. It takes time away from other educational activities. Furthermore, it takes time to master the intervention and disseminate it among other school personnel. The dissemination is a well-known process and can take many years; the research period may be too short to see the full effect of implementing MASS-PS. [22] However, once they started working with MASS-PS, the ACs experienced enough benefits—in the insight into absenteeism rates, the improved contact with parents through care rather than control, and a decrease in absenteeism—to offset the downside of spending time. Moreover, glimpses of ACs internalising the MASS-PS method were seen, as more and more of them performed the identification step, and contacted CYH physicians, without being prompted.

The evaluation at the level of the *organisation* highlighted prerequisites that need to be met in order to successfully implement MASS-PS. The availability of an absenteeism registration program that allows for clear registration and the identification of ESA is paramount. Especially because professionals from another field (teachers) have to select a group at risk for medical absence, selection should be easy and quick.

Other prerequisites for MASS-PS are the availability of an AC as a key figure, and sufficient staff capacity, replacement, and transfer of duties in case staff leaves. In the Netherlands and across Europe, there is a shortage of teachers, and the workload for school personnel is higher than nearly any other profession. [23–25] Thus, it is not only an organisational problem, it also has links to the socio-political context as teacher shortages and lack of political priority can make school-based health interventions unfeasible. It should be noted though, that MASS-PS in itself can improve efficiency with its focus on targeting and prevention of deterioration of biological, psychological, and social problems.

Examining the *socio-political context* further, the biggest event during this research period was the start of the COVID-19 pandemic, which increased the prevalence of sickness absence and caused a school lockdown for 2 months. Thus, attention to school absenteeism was even more important as research has shown that the pandemic increased school absenteeism, missed lessons, and differences between pupils. [26] MASS-PS was still used during this period and was reported to have helped in a few schools, showing the compatibility of MASS-PS, the need for such an intervention to tackle absenteeism, and its efficiency.

In the present study, the framework for elements of implementation was not used during data collection to minimise information bias. The framework allowed for structuring the findings. However, it did not highlight the weight of each of the

factors compared to each other and, while most of the elements could be found in the data, it is not known if elements not described by the framework were missed. Additionally, while data saturation was reached on each level of implementation, not all specific elements were mentioned by the ACs, such as performance feedback, descriptive and subjective norms, and financial resources. It is not known whether the ACs experienced any problems or benefits or simply had little knowledge of these elements. For example, some ACs may not have a financial role in their school.

Methodological Strengths and Limitations

Various factors contributed to the study's trustworthiness, defined as the credibility, dependability, transferability, and confirmability of the data analysis. [27] A strength of this study is the rich data collected, with both in-depth focus group interviews and logbook information from more than 200 conversations with individual ACs. This data triangulation added to the trustworthiness, specifically the study's credibility, as the data often showed similar sentiments in both the focus group interviews and logbooks. The data were mainly collected by one researcher which may have added to a confidential atmosphere that stimulated the ACs to be more honest. To reduce bias and improve dependability of the method, this researcher had frequent reflective meetings with all authors during data collection. Finally, all data were read by the research team, the data were analysed by two different researchers, and the findings discussed among all authors at different moments.

This study found that the implementation of MASS-PS in primary schools was low during the first year, and no data on reach and implementation were shared by ACs that year. To improve implementation, three measures were taken at the level of the intervention itself and the organisation: adjustment of the threshold for ESA, adding a consultation function with regular meetings, and creating software for the identification of ESA. Additionally, more schools were included to increase data collection in following years. These measures had a direct impact on the finding, for example, in the first year ACs reported issues with implementing the threshold criteria and identifying ESA. In order to be able to implement further steps of the intervention, it was necessary to improve the criteria, otherwise it would not have been possible to study the implementation of the full intervention. Problems with the criteria were not reported after 2018. The changes led to a better uptake, showing that evaluation and adjustments are crucial during the implementation of an intervention. The addition of regular meetings and more participating schools led to more data and data saturation, as mentioned above.

While the findings are theoretically transferable to all schools—particularly schools motivated to tackle sickness absence—selection bias is rather probable, as the

participating schools may have been more motivated to tackle sickness absence than the schools that declined participation. The schools approached in 2017 were selected at random to minimise this bias. MASS-PS can probably be implemented successfully in other schools in the Netherlands, as the difference between schools are relatively small at all levels of implementation. The comprehensive description of the results, which has been discussed on several occasions with all authors and included illustrating quotes and logs, contributes to confirmability of the study. Whether MASS-PS can be implemented well in schools outside of the Netherlands needs to be studied, as the socio-political context or organisational structures may differ. Moreover, this process evaluation does not demonstrate the effectiveness of MASS-PS. The effect evaluation requires an intervention to be successfully implemented first. The findings that ACs believed there to be a positive effect and that teachers talked to parents about absenteeism in 489 cases of the initial 1220 cases at risk (40%) might indicate an effect, but this needs to be substantiated in a planned effect evaluation.

Recommendation for Further Research

The MASS-PS intervention targets primary school pupils as a whole, but the ACs suggested that both parents and teachers believe that sickness absence has less of an impact on four- and five-year-olds than older children. Future research should examine the longitudinal effects of the intervention in younger children separately.

Recommendations for MASS-PS

This study provided several options that could improve MASS-PS and its implementation.

Changes That Could Improve MASS-PS

- Adjusting the threshold of more than six days or more than three periods in a school year to more than nine days or more than four periods.
- Adding a consultation function by a CYH professional to reinforce MASS-PS on an organisational level and to give medical advice on actions to take for individual pupils.

Prerequisites That Could Improve the Implementation

- Supplying software to identify ESA to all schools.
- Unifying the recording of the reason for absenteeism (e.g., sickness absence, doctor's visits, other authorised absence, tardiness, and other unauthorised absence).
- Making the multi-disciplinary team part of the school structure.
- Including the identification of ESA as a standing item on the school agenda and an official task in the school organisation.

Recommendations for the Implementation of School-Based Health Interventions

When designing and implementing a school-based health intervention focussed on medical advice for sickness absence that targets an at-risk group, it is crucial to ensure awareness of both the health problem and the benefits for schools in addressing it. In the present study, ACs reported that the intervention was easier to use as soon as teachers and parents became aware of the impact of sickness absence on well-being. Additionally, the remarks on the difficulty teachers had in talking to parents suggested that it could be important to keep the capabilities of school personnel in mind and include either support or training in a school-based health intervention.

Finally, sufficient teaching staff is crucial for the execution of a school-based health intervention such as MASS-PS. The extra responsibilities should not lead to overload and, consequently, sickness absence among teachers. However, this is a real possibility due to international teacher shortages and high work stress. However, this can only be achieved by political action, which is beyond the scope of this study. Furthermore, the timing of introducing MASS-PS should be aligned with sufficient available staff.

Conclusions

The newly designed school-based child and youth healthcare intervention MASS-PS was implemented and the process evaluated. Elements associated with all levels of implementation contributed to the usability of MASS-PS, especially the alignment between the goal of the intervention and of the users to improve the child's well-being. Emphasizing the benefits for education was crucial for implementation. A major barrier for the implementation of MASS-PS and—in a similar vein—other school-based health interventions, is shortage of staff, which requires actions at the socio-political level. Even so, MASS-PS supports efficient absence management as it targets those pupils most in need and prevents further deterioration of underlying problems. The present study found that MASS-PS can be improved by the addition of an adequate threshold for ESA and by supporting school personnel with the option of a medical consultation for the child and his or her caregivers with a child and youth healthcare physician.

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CHAPTER

6

The 'Medical Advice for Sick-
reported Students in Primary School'
(MASS-PS) Intervention in practice:
Effects on sickness absence

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CHAPTER

7

General discussion



Research into the development, implementation and evaluation of the ‘Medical Advice for Sick-reported Students for primary school’ intervention (MASS-PS) was presented in this thesis. MASS-PS aims to reduce sickness absence among primary school pupils. It targets pupils with extensive sickness absence (ESA), as ESA may indicate underlying problems and can lead to negative consequences that impact a child’s health and education. [1–4] ESA is defined as more than nine schooldays or more than four periods of sickness absence in a school year. From a public health perspective, ESA should be regarded as a red flag that can be addressed early on to improve the child’s long-term health and well-being. Research on sickness absence among primary school pupils is a relatively new topic and has scarcely been studied before.

To develop and evaluate MASS-PS, the intervention mapping (IM) approach was used. IM encourages a systematic process to develop a health intervention by combining theory and practice and incorporating stakeholders’ views. [5] The studies in chapters 2, 3 and 4 used data from school absenteeism registries and stakeholder interviews and ultimately resulted in the MASS-PS intervention, which provides a structured approach to tackle sickness absence among primary school pupils. In Chapter 5 the implementation and process evaluation are described, and in Chapter 6 the effect evaluation of MASS-PS is covered.

This chapter presents the main findings of the five studies and reflections on these findings around five themes: the public health perspective, the needs assessment, the development of MASS PS, the implementation and evaluation of the MASS-PS intervention. Next, the methodological strengths and weaknesses are discussed, as well as recommendations for future research and practice.

Public health perspective on sickness absence

Throughout this thesis, a public health perspective is applied to causes of sickness absence among primary school pupils. Public health is broader than just physical and mental health, takes a holistic view of health, considers the larger societal context and addresses factors that impact the health and well-being of entire populations. It seeks to prevent diseases and improve overall health outcomes by promoting health, preventing illness, and addressing the underlying causes of health disparities. [6,7] One crucial condition to be healthy in life, as well as an important factor in reducing health disparities, is education. [8,9] Access to education is one of the rights of the child. [10] When children are absent from school, the opportunity for education is reduced, which will ultimately impact the health of the population.

When the public health perspective is applied to school attendance, it encourages attention for sickness absence. The public health perspective enables a more optimistic view on sickness absence as a problem that can be addressed, rather than an unavoidable phenomenon aimed at recovery from illness. This approach also emphasized that sickness absence may have negative consequences such as lower educational achievement and emotional, behavioural and medical problems [4,11]. This implies that when addressing the underlying problems of sickness absence, health professionals with a biopsychosocial approach are necessary. The underlying problems involve a complex interplay of biopsychosocial factors, including social problems and educational problems. The findings in this thesis suggest that, by paying attention to all of these factors, and through multidisciplinary collaboration, access to education may be improved.

Needs assessment

To develop an intervention that can systematically address sickness absence among primary school pupils, it was important to ensure that the intervention matched the needs of stakeholders such as parents, school professionals, and child and youth healthcare professionals. Therefore, this thesis started with a broad needs assessment, as part of step 1 of IM, examining the occurrence of school absenteeism and the current practices and needs of stakeholders.

A study was performed, described in **Chapter 2**, to gain a more comprehensive understanding of the occurrence of school absenteeism in Dutch primary schools and how sickness absence relates to other types of absenteeism. The study was based on the school absenteeism registries of 14 primary schools, with more than 3000 pupils. The results demonstrated that sickness absence was the most prevalent type of absenteeism: more than 70% of pupils had at least one episode of sickness absence in the school year. Despite complications in the comparison due to different definitions of sickness absence and different measurements, these results align with those found in reports in the Netherlands and in the United Kingdom [12–15]. National and international standardisation of registration and terminology is recommended.

The study in chapter 2 found differences between two types of regular education: mainstream schools and special schools for primary education (SSPE). Pupils attend SSPE schools when there are mild learning difficulties, behavioural problems and/or parenting problems [16]. When focussing on ESA in these schools, we found that 13% of pupils in mainstream schools and 23% in SSPE exhibited ESA. Additionally, it was found that that pupils with ESA missed more days of school compared to their

classmates. Considering that every additional missed school day has been shown to negatively impact the child and means less instruction and less peer contact, ESA seems to select the group of children at risk. [15,11] ESA occurred more frequently among pupils in SSPEs and among pupils in mainstream schools with less educated parents. This finding illustrates that ESA should not be regarded as a purely medical issue.

In **Chapter 3**, stakeholders' views on sickness absence in primary education were examined. The thematic analysis of six semi-structured focus group interviews with 27 stakeholders revealed that a structured approach to ESA was missing. There was no consistency in the steps taken to tackle sickness absence in the current approaches, and as a result, children with possible problematic sickness absence can be overlooked easily. It became clear that stakeholders were motivated to address ESA in an effort to reduce sickness absence and improve child well-being and that they viewed collaboration with each other as crucial in order to address the various underlying causes of ESA. The well-being of children was a clear shared goal for the interviewed parents, school professionals, child and youth healthcare physicians (CYHPs) and school attendance officers alike. A shared goal can improve the adoption of an intervention and the collaboration between users, and therefore, this finding was used in the development of the MASS-PS intervention. [5,18]

The stakeholders considered sickness absence to be complex due to a wide variety of possible underlying problems. They categorised the causes of sickness absence as problems of the child itself, including physical and psychological problems, problems at home or problems at school. These categories can also be found in other school attendance literature. [16,18] Both the stakeholders and the literature suggest that multidisciplinary collaboration is needed to address sickness absence to be able to tackle all the underlying problems. [1,18,20]

Interestingly, school professionals believed the underlying causes of sickness absence could generally be found at home, while parents believed the cause could be found at school. This finding is consistent with other school attendance literature, as a Swedish study found that teachers considered school factors to be one of the least important contributors to absenteeism and home factors to be the most important contributors, while in another study, Norwegian parents indicated that school factors greatly influence attendance. [21,22] School professionals may not be aware of the importance of these school factors when tackling absenteeism. [23] The mismatch between the views of parents and school professionals shows the importance of a partnership between them when addressing sickness absence, as both are needed to understand the underlying problem and find appropriate solutions. [1,11]

The needs assessment showed that a structured approach is missing, aimed at reducing sickness absence among primary school pupils, and that such an intervention requires a focus on improving child well-being, consistent registration of absenteeism, an objective method to identify pupils struggling with sickness absence and multidisciplinary collaboration. Considering the public health perspective, the collaboration needs to be between parents and school professionals, as well as appropriate external professionals, such as a CYHP, to tackle the wide variety of underlying problems that may cause sickness absence.

MASS-PS

MASS-PS starts with a collective approach that includes awareness in school of sickness absence as a problem that can be addressed; a communication strategy for all professionals by communicating in a caring manner; registration when a pupil is absent and then using the data in the absenteeism registry to identify pupils with ESA, based on a threshold. An appointed attendance coordinator within the school identifies these pupils and discusses the pupils with their teacher. Together they determine whether they know enough to adequately provide support or whether they need to contact the parents. The conversation with the parents is done in a caring manner and is focused on collaboration and finding solutions for underlying problems. Next, the parents and school professionals decide whether to involve an external expert. If no external expert is needed, the parents and school professionals create a management plan together. When external experts are needed, the pupil is either referred directly or the school professionals and external experts form a multidisciplinary team that weighs which external expert is most appropriate to perform the problem analysis: either the CYHP for medical advice from a broad perspective, a remedial educationalist for evident problems at school or a social worker for clear problems at home. When the origin of the problems is unclear, the child is referred to the CYHP as well. The external expert examines the pupil and their situation and, together with everyone involved, creates a management plan to optimise school attendance and well-being. The plan is evaluated and the attendance is monitored by those involved.

Development of MASS-PS

The original MASS was developed for secondary education students and aimed to reduce sickness absence by addressing the underlying problems. [24] The needs assessment was the starting point for the adaptation of this intervention to primary schools. The development of MASS-PS is described in **Chapter 4**, which incorporated

the needs assessment and covered the next part of steps 1 and steps 2 to step 4 of IM. These steps included the creation of a logic model of the problem and a logic model of change based on the needs assessment, the literature and the original MASS intervention. Using these logic models and the Integrated change (I-change) theory, the MASS-PS intervention was developed by a planning group consisting of experts with diverse backgrounds. [25] During the development, the growing-into-deficit theory, the biopsychosocial-ecological theory, and Kearney and Graczyk's framework for school attendance interventions was taken into account. [26–28] Finally, MASS-PS was presented to stakeholders in the pre-testing phase. These IM steps encouraged the systematic development of an intervention to address sickness absence in primary schools, MASS-PS, by combining stakeholders' input, the literature and theory. The developed MASS-PS is outlined in the text box below and a schematic representation can be found in Figure 1.

Implementation of MASS-PS

Chapters 5 described the implementation of MASS-PS, and represents step 5 of IM. MASS-PS was implemented in 29 schools for testing. In chapter 5, the implementation of MASS-PS was evaluated through six focus group interviews and over 200 individual interviews with attendance coordinators (ACs) over three school years between 2017-2020. To analyse the data, content analysis and the implementation framework of Fleuren et al. were used, considering aspects on the level of the intervention, the user, the organisation and the socio-political context. [28] Overall, the interviewed ACs considered MASS-PS to be usable, felt it increased their self-efficacy and helped them to identify pupils with sickness absence, some whom they would not have noticed before. This was especially important to note because it shows that MASS-PS can certainly help identify pupils who may be overlooked otherwise. The ACs also believed that using MASS-PS had a positive effect on the pupils' well-being. The adoption of MASS-PS appeared good as ACs were very enthusiastic about the design of the intervention and considered it a good fit for their schools' current working methods. However, the transition from adoption to implementation was initially very low, which is a common challenge recognised in implementation research. [5,29,30] Adoption refers to the decision to use the intervention and implementation refers to using the intervention in daily practice. [18] To counteract the initial implementation problems for MASS-PS, several measures were taken by the planning group after the first year of implementation, school year 2017-2018: the threshold for ESA was made stricter, the need for a multidisciplinary team was made optional rather than mandatory, and a consultation function was added.

Originally, ESA had been defined by Vanneste et al. as more than 9 days or more than 4 periods of sickness absence in a school year. [31] To select pupils in MASS-PS, the threshold was lowered in the needs assessment in 2017 (chapter 4), based on the input from stakeholders, to more than 6 days or more than 3 periods of sickness absence in a school year. The underlying assumption was that it was more important to include all pupils with possible problems than to exclude pupils without problems. However, in practice, this threshold turned out to be unfeasible in most schools, because too many pupils were selected and this defeated the purpose of a threshold: selecting a group most at risk of negative consequences. This led to demotivation among attendance coordinators and hindered implementation, therefore, the threshold was adjusted back to more than 9 days or more than 4 periods in a school year in 2018, which was much more feasible for the ACs. While more feasible, this does raise the question of whether this threshold selects all pupils at risk of negative consequences of sickness absence and its underlying problems, or only a selection of these pupils, and this requires further research.

Another change at the intervention level made in 2018 was the addition of a consultation function with a CYHP. The ACs wanted advice from an experienced CYHP to help determine the appropriate steps for a pupil. The consultation function included medical advice and advice on the roles of external professionals and was used by all ACs. This need showed that it was complicated for ACs to determine what was appropriate for a pupil with ESA, possibly because addressing sickness absence is new and they had not learned to address ESA before. The consultation function provides the opportunity to find this knowledge within the school's network, in the CYHP linked to the school, and is now an added option in MASS-PS that helps to improve collaboration between school professionals and CYHPs.

On the level of the organisation, new software for identifying pupils with ESA was created, and frequent meetings were organised to ensure time was allotted by ACs to use the MASS-PS intervention.

The process evaluation showed that these measures helped the transition from adoption to implementation. After 2018, the interviewed ACs believed that MASS-PS helped them to recognise and tackle the problem of sickness absence among pupils. However, the effect evaluation study in chapter 6 showed that the pupils with ESA were rarely referred to the CYHP for medical advice, and this may suggest that, although MASS-PS seems to have been implemented fairly well in schools, at least according to the ACs, the steps involving external professionals, including the CYHP, may require further research and implementation, for example by creating awareness of the benefits of the medical advice, as a recent study suggests may be necessary. [32]

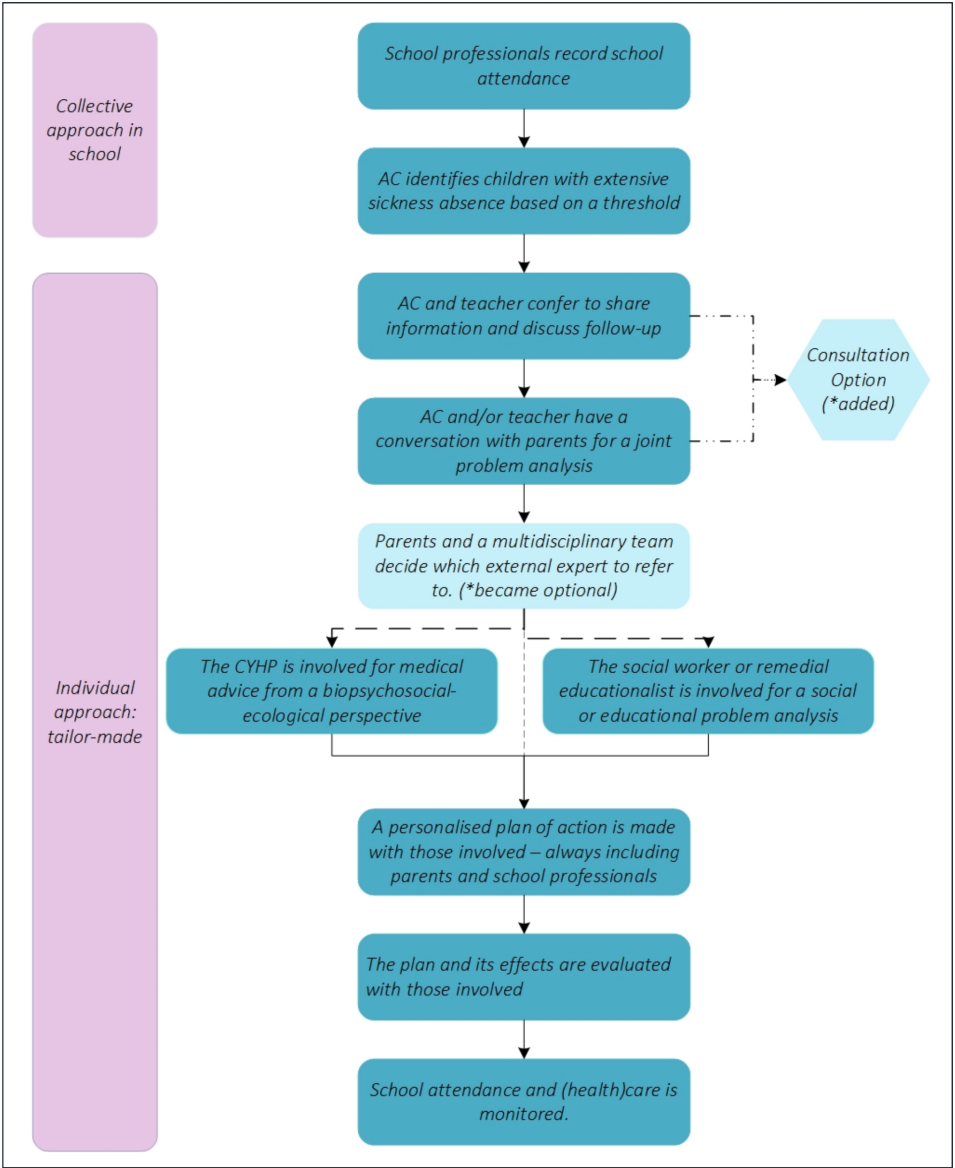
To summarize, the following key features of the original MASS in secondary education were kept for MASS-PS: the collective approach encouraging awareness of sickness absence in school; registration and communication from a caring manner and attention for the pupils who are absent. Additionally, the individual trajectories for pupils with ESA involving medical advice were kept in the intervention. However, four adaptations were made: a change of the threshold for ESA; the introduction of a consultation between the teacher and the attendance coordinator; a consultation function with a CYHP and the addition of the remedial educationalist and social worker as external experts.

Evaluation of MASS-PS

The effect of MASS-PS on sickness absence was studied in chapter 6, representing step 6 of IM. Sickness absence rates in 17 intervention schools in the region of West-Brabant were compared with 8 control schools in the region of South-Limburg based on data from the school absenteeism registries of the school years 2015-2016 through 2019-2020. A small positive effect of MASS-PS on sickness absence reduction was demonstrated. It was found that pupils with ESA in the school year 2018-2019 had missed fewer school days in the following year in the intervention group compared to the control group. However, a similar significant effect was not found for the number of periods of sickness absence. Additionally, there was no significant reduction in the percentage of pupils with ESA when comparing the intervention and control groups. The findings suggests that the absenteeism itself was not preventable, but the duration was because the pupils in intervention schools were reported sick as often as those in the control schools, but went back to school more quickly. Perhaps the absenteeism itself was not preventable, but the duration was. Considering the implementation, it seems promising that any indication of effectiveness was found.

These studies showed the importance of evaluation of an intervention in practice. Before the evaluation, MASS-PS was easily adopted, but not implemented, and thus not used in daily practice. By taking measures based on the early findings of the process evaluation, improving the usability of the intervention and knowledge of the users through collaboration, the intervention was usable in schools and showed promising initial results. Further improvements to the implementation can be made based on the process and effect evaluation, such as improved use of the medical advice.

Figure 1. Schematic of MASS-PS, including changes made during the implementation.



Methodological considerations

A strength of this research is that the MASS-PS intervention was developed and evaluated in a systematic way with substantial stakeholder input. Further, all six steps of the IM process have been performed, from the needs assessment to development to

implementation and evaluation. MASS-PS was developed on the foundations of the original, effective MASS intervention for secondary education, and the use of the IM approach allowed for a thorough analysis of the changes needed for primary schools based on the literature and a wide variety of both qualitative and quantitative data. [5,23] It is possible that other methods of community-based participatory research could also have aided the development of MASS-PS, such as the shorter 'adapted version of Intervention Mapping' (AIM), which has previously been used to develop a health-promoting intervention in primary schools. [32,33] The AIM approach facilitates the development of an intervention by stakeholders, making it feasible by holding structured meetings and reducing the thoroughness of IM. [33] The AIM is therefore most appropriate when stakeholder knowledge is the main requirement for development. For MASS-PS, the IM method was considered more appropriate to be able to include the lessons from the extensive literature on school absenteeism and the knowledge of the original MASS intervention in the development of this new intervention. This choice was later confirmed as the needs assessment showed low awareness of sickness absence as a problem among some of the stakeholders initially, which would have made the AIM approach less usable.

This thesis represents qualitative research with a wide variety of professionals, as well as quantitative data from over 4,000 pupils in participating schools. School professionals, CYHPs, school attendance officers and social workers from three different regions participated in different parts of the research. Considering the wide variety among the stakeholders, only one group was low in variety: the parents interviewed for the needs assessment in chapter 3, who all worked in the same public health organisation, albeit in very different jobs. A total of 40 schools participated that varied in size between 44 and 525 pupils, with some urban and different cultural backgrounds in the intervention and control regions. This involving of a wide variety of stakeholders and schools increases the transferability. The external validity might have been reduced because MASS-PS was tested in only one region of the Netherlands: West-Brabant. This is expected to be of minimal consequence within the regular primary education in the Netherlands as the aims and organisation of education and care are similar throughout the Netherlands; schools are similar in size, similar professionals work in the schools, and pupils have similar access to educational support and care. However, primary education in other countries, and possibly special needs education in the Netherlands, may require further evaluation before MASS-PS is usable in those settings, as the organisation of support and care may be very different. The development of MASS-PS is described in detail in chapter 4; a thorough understanding of the development process can aid future researchers and professionals when adjusting MASS-PS to the needs of a different region.

In the development of MASS-PS, the Integrated change model [I-change model] was used as the theoretical basis to determine how to achieve the intervention objectives through behavioural change. [25] The I-change model explains behaviour through factors that influence motivation for behavioural change, such as awareness and efficacy. Using this theory as a foundation for the development led to an intervention that targets the motivation of users, for example through creating awareness of the problem of sickness absence and encouraging self-efficacy. This led to positive results in the process evaluation. However, the process and effect evaluation studies also revealed some missing elements, such as the lack of time for school professionals to use MASS-PS even though they intended to use MASS-PS, or the seemingly low number of referrals for medical advice. This may be because the I-change model focusses on individual motivation and intended behaviour. [35,36] A behavioural theory that focusses more on unintended behaviours or on cooperation may have been able to improve the intervention development for those elements specifically. [35,37]

Primary school professionals were targeted for the implementation of MASS-PS and the process and effect evaluations in this research. This focus was chosen for this research because it is the school professional who initiates the start of the intervention by identifying pupils with ESA. School professionals play a key role in the contact with the child and parents as a good connection between pupil and teachers is crucial for the return to school. [11,20] It was expected that school professionals would follow the steps of MASS-PS and refer to the external experts when necessary, and the school professionals involved reported no problems on this front in the process evaluation. However, the effect evaluation showed that more attention may have been needed for the implementation of the steps involving external experts as only a limited number of pupils received support from the CYHP. The possible underutilisation of the medical advice may indicate implementation failure and may have considerably restricted positive effects of MASS-PS. The intervention may require further implementation, creating awareness among school professionals of the possible benefits of medical advice in reducing not only the underlying causes of absenteeism, but also its negative consequences. Thus, it may be that the effect evaluation was performed too early and more adequate implementation is required before examining the full effects of MASS-PS.

To ensure a good fit of the intervention, the process and effect evaluations were practice-based, in the setting where MASS-PS is meant to be used: in the daily working environment of primary schools. To examine the effect of an intervention, the randomised controlled trial may be considered the golden standard by some, but that design is more applicable when an intervention is finalised, rather than during development. [38] In this research, the focus was on the process evaluation and first

signs of effect for MASS-PS with an intervention and control region as befitted the research questions.

The real-world setting of the research meant that major events could impact the outcomes: namely the covid-19 pandemic which started near the end of the research period and may have affected the results of the process and effect evaluation. The pandemic hit the Netherlands in March 2020, which was the last school year of the research period for the intervention schools. The schools had to close during a lockdown and, when they reopened, more absenteeism was seen as all family members of a person with signs of infection were advised to stay home. Additionally, the focus group interviews for 2020 were held online, rather than in person. The intervention schools reported no additional problems in the use of MASS-PS during that period, and some even reported that MASS-PS helped in dealing with the additional absenteeism. The covid-19 pandemic also impacted the research in the control group, as less schools could be included and not enough SSPEs participated to determine effects of MASS-PS in SSPEs. The pandemic meant that school professionals had more work dealing with the additional absenteeism and adjustments to the educational programme, and were less inclined to make time to share data and contribute to the study.

Recommendations for further research

The current work has led to new insights into sickness absence among primary school pupils and an intervention to address ESA. Several recommendations can be made for further research to build on these results and increase the understanding of sickness absence in primary education related to the target group, the underlying problems, the target group and the outcomes.

Considering the selection of the target group, further research is recommended to establish which pupils are most at risk of negative consequences. Using a threshold has helped school professionals to identify pupils, it needs to be determined if it selects the children most at risk. This requires further research to determine the right adjustment of the threshold and if there are certain sickness absence patterns, underlying problems or pupil and school characteristics that have more negative or long-term effects than others. A study by Schoeneberger et al. found that certain attendance patterns were related to much higher school drop-out rates than other patterns. [39] For example, children with continually increasing absenteeism had higher drop-out rates than children with initially high truancy. Ensuring that the appropriate pupils are selected ensures that the intervention can have the highest possible impact on education and health.

Additionally, it should be examined whether the positive effects of MASS-PS affect different subgroups of pupils equally. Are children with chronic illnesses or children with lower educated parents or from migrant families benefitting as much from MASS-PS as pupils from families with a high socio-economic status? In chapter 2, it was found that pupils with lower educated parents are more likely to be absent from school than their peers and this difference requires more research in relation to the effectiveness of MASS-PS. Previous research has also suggested that different subgroups may be absent more than others. [4,17] For example, Keppens et al. found that, in Belgium, truancy is registered more frequently for children speaking a different language at home or with lower educated parents and that, as a result, these families are penalised more frequently, too. [12] The MASS-PS intervention was intended to fit all regular primary schools and their pupils, and the individual trajectories are tailored to the pupil to fit their needs. However, further research could reveal if MASS-PS truly meets the needs of all pupils or if adjustments are needed for specific subgroups.

Considering the underlying problems, further research is needed to fully understand what is causing sickness absence in primary education. A better understanding of the underlying problems could help to address sickness absence on an individual level. From a study of MASS in secondary education, it is known that 44% of secondary education students seen by the CYHP had a disease and 82% of these students had a problem not diagnosed as physical complaints, psychological problems or lifestyle problems. [40] Stakeholders believed the underlying problems of sickness absence in primary school pupils to be: problems of the child, such as medical and psychological problems, or problems in school or at home. However, the full extent of underlying problems for pupils with ESA was not studied and further research is recommended. Considering both the implementation and effect of the MASS-PS intervention, the behaviour of school and external professionals can be studied further. This thesis used the i-change theory to determine how to impact an individual's intended behaviour, and further research could show how a professional's behaviour further impacts the use of MASS-PS through unintended or intermediary behaviour and behavioural maintenance. [35,36] For example, are there unintended or intermediary behaviours among school professionals that inhibit the implementation? How exactly do CYHPs address underlying problems and how effective is their intervention? Additionally, the organisations professionals work for can impact their behaviour, for example through the resources provided by the organisations, such as time and sufficient staffing, and this should be further examined to improve the implementation of MASS-PS. [37]

Considering the outcomes of MASS-PS, it is worthwhile examining the effectiveness of MASS-PS when fully implemented, and in a broader context than the reduction of

absenteeism among pupils, which is considered the primary outcome of MASS-PS. The inclusion of secondary outcomes is recommended for future effectiveness studies, as they can be relevant for the development and health of a child and, subsequently, for school attendance. [17,31] This may be done by studying the changes in the quality of life of pupils, which can include a child's well-being, and examining the effectiveness of deployed care and educational adjustments in reducing the underlying problems. [41]

Finally, possible unintended consequences may have resulted from the use of MASS-PS and should be examined. For example, a possibly positive unintended consequence of MASS-PS may be that the school professionals also increased their attention for pupils with other types of absenteeism, such as tardiness and truancy, in addition to pupils with sickness absence. Unintended negative consequences may include communication problems between parents and school professionals because absenteeism can be a sensitive topic of conversation, or it may include unnecessary medicalisation of the pupils' problems due to the early identification. By including the CYHP in the intervention, unnecessary medicalisation should be limited, as the Child and Youth Healthcare Services aim to normalise problems when possible. [42]

Recommendations for practice

ESA among pupils should be seen as a red flag, signalling possible underlying problems that negatively impact the child's well-being and cause absenteeism. MASS-PS is a usable and promising intervention to address ESA in primary schools through multidisciplinary collaboration and a structured approach.

The evaluation of MASS-PS in this thesis resulted in several recommendations for the practical use of the intervention. Firstly, schools require clear guidelines to accurately register school absenteeism and make use of the acquired data. It is clear, from both recent research and this thesis, that uniform terminology is needed to improve registration to be able to use data to improve school attendance and promptly identify pupils with school attendance problems, such as ESA. [12–15] The classifications used for different types of absenteeism by the intervention schools in this research were sickness absence, doctor's visits, other authorised absenteeism, tardiness and unauthorised absenteeism. Currently, the Ministry of Education, Culture and Science is working on a bill to standardise absenteeism terminology and improve the use of absenteeism data. [43] It is up to the schools, however, to implement the upcoming changes and express the need for easy identification of emerging school attendance problems to their software providers.

Secondly, school professionals may require more support in talking to parents about the ESA of their child, as some reported that this was difficult to do well. Considering the importance of a good relationship between parents and school professionals in reducing absenteeism, and because teachers and parents may not always agree on the cause of sickness absence, good communication is crucial. [32,44] MASS-PS was shown to help through the use of objective data, by focussing on a common goal: the child's well-being and with the strategy for communication: using a caring approach. However, more action is recommended, for example with further communication skill training for school professionals, or even by incorporating these skills in national teacher training programmes.

Thirdly, it is important to support the implementation of the intervention with adequate time and guidance. Time, effort and guidance were needed for school professionals to internalise each step of MASS-PS. Moving from adoption to implementation in a school required set times for the AC and researcher to meet and discuss the use of the intervention. Measures have already been taken within MASS-PS to ease implementation, on the level of the intervention and organisation, and some internalisation was seen among ACs. In practice, it is important that time is allocated for ACs to carry out the intervention and for them to have access to sufficient guidance from those deploying the intervention. This guidance can be combined with the consultation function in MASS-PS, as this seemed to work well during the research period.

Fourthly, it is recommended to pay attention to the referrals for medical advice from the CHYP for children with ESA. With the current MASS-PS, 62 (9.5%) of 650 pupils with ESA were referred to the CYHP for medical advice, and 48 were examined by the CYHP. A recent study found that teachers can be hesitant to involve a CYHP for a pupil with sickness absence, mostly because they are unsure of the effect of medical advice on reducing sickness absence. [32] While further research is still needed to determine the reasons for the limited use of the medical advice, paying attention to this in practice is recommended. It is important to ensure that ACs are aware of the benefits of medical advice to reduce negative consequences for the pupil and also to ensure that the process of referral to an appointment with the CHYP runs smoothly. Fifthly, in the Netherlands the MASS-PS intervention, and the original MASS as well, are currently organised by the Child and Youth Healthcare Services. Child and Youth Healthcare Services organised previous and the current research, and the dissemination of MASS is done by the Dutch Knowledge Centre for Youth Health (NCJ) [31,45] The advantage of this structure is the public health view, and it ensures that medical advice is easily organised, but an educational approach might have offered more chances to influence educational aspects such as absenteeism

registration and teacher training. For MASS-PS to succeed, it is crucial for the stakeholders in education, child and youth healthcare and social work to collaborate together at the national and regional levels, and organising such collaboration is strongly recommended before implementation of MASS-PS in a region.

Finally, in the general introduction in chapter 1, the lessons learned from occupational health were discussed and the results of this thesis may interest occupational health too. Especially the use of ESA may be beneficial for occupational health, as the focus there is generally only on long-term sickness absence. Frequent sickness absence, however, can also be a sign of underlying problems and may be a precursor of future long-term sickness absence [46]

Concluding Remarks

This thesis presented the development, implementation and evaluation of MASS-PS among a large group of stakeholders and pupils. MASS-PS is an intervention to reduce sickness absence among primary school pupils and was easily adopted by school professionals. Even though challenges in implementation arose, it was usable in schools with the measures taken, and school professionals perceived positive effects on children's well-being. Pupils with ESA missed fewer school days when the school used MASS-PS compared to pupils with ESA in control schools. These findings demonstrate that MASS-PS is a very promising intervention.

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ADDENDA

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Impact Paragraph

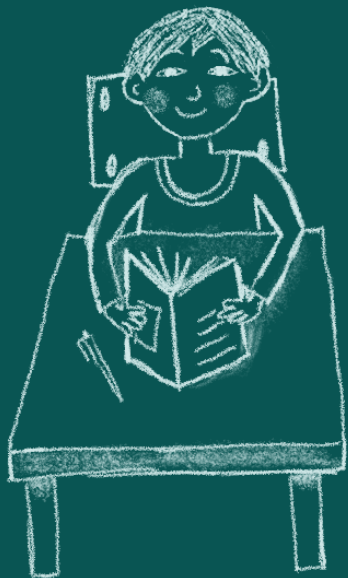
English Summary

Dutch Summary

(Nederlandse samenvatting)

About the author

Acknowledgements



Impact paragraph

In this thesis we studied the development, implementation and evaluation of the ‘Medical Advice for Sick-reported Students for primary school’ (MASS-PS) intervention from a public health perspective. MASS-PS aims to address sickness absence among primary school pupils. It stimulates school professionals, pupils, their parents, child and youth healthcare physicians [CYHP], social workers and remedial educationalists to work together to improve school attendance and, ultimately, child well-being.

Scientific impact

Traditionally, *research into school attendance* has focused on tackling unauthorised absenteeism, often in secondary education. [1,2] More recently, the focus has shifted to improving school attendance, which includes addressing both unauthorised and authorised absenteeism. [3] With our research we have added to the school attendance literature by providing insight into the level of sickness absence in primary education, and into ways to address it. Sickness absence connects the research fields of education, psychology and healthcare as addressing school attendance clearly requires a multidisciplinary approach.

Our research into sickness absence in primary education builds on the research of the original MASS intervention in secondary and vocational education that first established how important it is for *public health* to address school sickness absence. [4–6] We show the importance of addressing sickness absence from primary education as pupils with extensive sickness absence (ESA) are also absent more often due to other types of absenteeism than their peers are, such as truancy, tardiness and absenteeism for doctor’s visits. Additionally, ESA can be caused by underlying problems that may also impact educational achievement and health. Vanneste et al. found that underlying problems among secondary school pupils can be classified as a diagnosed disease, undiagnosed physical complaints, psychosocial problems and lifestyle problems. [4] We have further contributed to the knowledge on sickness absence by examining the views of stakeholders in primary education regarding the relationship between sickness absence and underlying problems, showing a wide variety of possible problems, at home, at school or of the child itself, and consequently argue that addressing sickness absence requires multidisciplinary collaboration. Additionally, we have established the norm for when sickness absence in primary school can be considered ‘extensive’ in primary schools. While the norm requires further evaluation, it offers a foundation for further research.

Looking at the *research methodology*, this thesis shows how the six steps of the intervention mapping approach, designed for creating health-promoting

interventions, can be used to develop and evaluate an intervention to improve school attendance. [7] Considering that managing sickness absence was such a new topic for primary schools and that the awareness of sickness absence as a problem was low, we considered the IM approach to be more relevant than, for example, the AIM method. IM allows for a thorough design based on literature and experience with the original MASS, and still has substantial stakeholder input. Using this structured method allowed us to systematically develop and evaluate an intervention that was easily adopted and usable and showed promising results. We found it advantageous to not only design the intervention, but also perform the process and effect evaluation, as both provided more insight into the workings of MASS-PS and how to improve it. The structure of IM also makes our research easier to understand and replicate for future researchers wanting to develop a similar intervention in their communities, for example addressing sickness absence in another country. We would recommend ensuring implementation is successful and completed before moving on to an extensive effect evaluation.

Societal impact

The research illustrates that ESA in primary education requires attention through a structured approach. We found that pupils with ESA missed more school days than other pupils, and this illustrates that addressing ESA is crucial, considering that school absenteeism is known to have negative effects on the future educational achievement and health of children.[1,8,9] We have developed, implemented and evaluated MASS-PS, which is, to the best of our knowledge, the first multidisciplinary intervention to address sickness absence among primary school pupils. The MASS-PS intervention provides a structured method to address ESA through collaboration between education, healthcare and social work. This can contribute to solutions for some of the major problems our society currently faces in the areas of public health, mental health, school attendance and education.

Firstly, for public health, the health disparities in society are a major challenge. While efforts to improve public health in the Netherlands have led to longer, healthier lives in general, health inequalities seem to persist and may even be growing. [10] People with a higher educational level generally live longer and in better health. To address this problem, the Netherlands Scientific Council for Government Policy advises focussing on the first 18 years of life and on those with a lower social economic status. The suggested topics to focus on are healthy lifestyle, mental health, smoking and alcohol abuse. While our research does not directly tackle any of these topics, MASS-PS does offer a way to identify children with potential problems through early identification of ESA which may be caused by mental health, social or lifestyle problems. When implemented fully, MASS-PS may reduce absenteeism and,

through the child and youth healthcare physician and social worker, offers access to lifestyle advice, psychological care, social care and health care, which may contribute to reducing health inequalities. Addressing ESA in primary education can lead to opportunities for public health prevention by tackling sickness absence at a young age. In the short term, this can offer prevention opportunities by addressing underlying problems and preventing further absenteeism. In the long term, it may offer selective prevention opportunities by preventing the consequences of absenteeism, such as reduced educational achievement, school drop-out and future health problems.

Secondly, mental health among children and young people is an ever growing concern in the Netherlands. Sickness absence could be caused by mental health problems. Reports show that mental health problems are increasing, more children require intensive psychological care, and they stay in care longer than before. [11] Connected with that are increasingly long waiting lists for care, meaning that more children with a problem have to wait to be treated, which may decrease their mental health further. To address these problems, the government, municipalities and various organisations of professionals have designed a reform agenda for youth care. [12] Youth care is the term used in the Netherlands to describe mental, social and pedagogical care for children and families. Different avenues of change have been proposed in the agenda, including more collaboration between education and youth care and different aspects of the life of a child, such as child and youth healthcare. The agenda advocates for early intervention to ensure problems stay small and treatment can be shorter and less intensive. The research in this thesis and the developed intervention MASS-PS can contribute to this societal issue through early identification of possible problems and collaboration between youth care, education, and child and youth healthcare.

Thirdly, another challenge for society is the increasing number of children missing school, some not going to school at all either with full-time truancy, known in the Netherlands as long-term absentees (Dutch: thuiszitters) or as early school leavers. [13] Sickness absence can be an early warning sign for underlying problems, hampers learning and may eventually lead to long-term absenteeism and early school leaving. In 2022, to tackle school attendance problems, the Minister of Primary and Secondary Education in the Netherlands planned to improve appropriate education for all children, make it mandatory for schools to register all types of absenteeism, including sickness absence, and regulate school attendance protocols in schools, including the use of effective interventions. [14] The Ministry also aims to improve the role for the school attendance officer and child and youth healthcare physician, but does not describe how this could be done. Both already have a statutory duty to aid in addressing school absenteeism. [15,16] This thesis contains the first description of the development and evaluation of an intervention to address sickness absence in the

Dutch primary school setting. MASS-PS can be regarded as a means to help schools and child and youth healthcare organisations to comply with the plans of the Ministry in practice.

Finally, for education in the Netherlands, a major challenge is the decline in school learning outcomes that seems to have increased during the covid-19 pandemic. [17,18] These challenges are distributed unevenly due to teacher shortages and the lack of qualified teachers is a larger problem in less affluent areas and children of lower educated parents show more decline in learning. Absenteeism is also related to reduced learning outcomes, and by reducing sickness absence, MASS-PS may contribute in a small way to preventing lack of educational achievement among children in vulnerable situations. [9] We found that the teacher shortage affected the implementation of the developed intervention, which shows that teacher shortages are not only a challenge for educational achievement, but also influence the implementation of (health) interventions. This seems especially pressing when considering that the government has planned to use school-based interventions to improve health through measures such as 'healthy school' and to improve mental health through the reform agenda for youth care. [12,14]

When looking at the impact of this thesis internationally, the results found may be equally important to the many other countries struggling with similar societal challenges. [3,19–22] The awareness of the level of sickness absence in primary education may increase the sense of urgency for public health and educational professionals and policy makers in other countries to tackle sickness absence in primary education.

Dissemination

To share the knowledge and insights gained through the studies in this thesis, various activities were undertaken. The findings of this thesis are particularly interesting for public health and educational professionals, researchers, and regional and national policy makers. To that extent, multiple ways of disseminating the findings were used. First and foremost, all published articles are open access publications, allowing anyone to freely access the information. The currently unpublished articles are also, or will be, submitted to open access journals.

The findings were presented at international conferences for public health, school health and school attendance, such as the European Public Health Conference in 2018 and 2019, the European Union School and University Health and Medicine Conference in 2017, 2019 and 2022, and the International Network for School Attendance Conference in 2019, 2021 and 2022. [23–26] The findings will also be

shared in a CYH section of the first Dutch school attendance conference in November 2023. Additionally, some of the findings were shared through media, in a newspaper and magazine article. [27,28]

MASS-PS and the findings were shared with the Dutch Knowledge Centre for Youth Health (NCJ) and the national MASS coordinators throughout the research. The NCJ manages the original MASS, ensuring its dissemination in the Netherlands. MASS-PS was also adopted by the NCJ, and the findings of this thesis contributed to the NCJ's new guidebook for MASS in the Netherlands, making the MASS-PS intervention available for all CYH organisations and schools in the Netherlands, alongside MASS for secondary and vocational education. Additionally, MASS-PS has now been incorporated into the national MASS training for child and youth healthcare professionals. MASS-PS was presented to several different CYHC organizations as well as to officials from the Ministries of Health, Welfare and Sport and Education, Culture and Science. A short informational video for MASS-PS was made for easy dissemination to schools, municipalities and other interested parties [figure 1].

More locally, in West-Brabant, MASS-PS was presented to municipalities, primary schools, regional collaborations for primary education, school attendance officers, child and youth healthcare professionals and policy makers on several occasions throughout the research. Finding funding and professionals to implement MASS-PS is now considered one of the priorities in the region, especially for the regional health organisation. MASS-PS is currently being implemented in multiple schools in West-Brabant and several other regions in the Netherlands.

Future

To continue to improve MASS-PS and understand sickness absence among primary school pupils, several public health doctor trainees have started empirical studies, e.g. into the implementation of MASS-PS and into the underlying causes of sickness absence. In the future, further attempts will be made to disseminate the findings and encourage research into MASS-PS.



Figure 1. QR-code link to Dutch introductory video for MASS-PS

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Summary of thesis

The development and evaluation of the ‘Medical Advice for Sick reported Students primary school’ (MASS-PS) intervention.

Chapter 1: General Introduction

Education is important for children’s development and future health. While most children in countries such as the Netherlands attend school daily, some children frequently miss school. The ‘school absenteeism’ should be seen as both an educational and public health problem as it may be caused by an underlying problem, such as an illness, depression or bullying, and both the problem and the absenteeism can have negative consequences for the child, such as missing contact with peers and, eventually, lower educational achievement and school drop-out. This, in turn, might reduce the child’s future job prospects and social economic status, which is a strong predictor of long-term health. Social economic status has even been related to the health and educational achievement of one’s own children, thus suggesting a possible transgenerational effect of frequent school absenteeism.

The most common type of school absenteeism is sickness absence: a child is reported sick, for example due to a physical problem such as an infectious disease or injury, or due to psychological or social problems, such as bullying or parental separation. Most children are only reported sick one or two days in a school year, but some miss school frequently or for a long time and may be more at risk of negative consequences. Also, frequent or long-term sickness absence might disguise a serious underlying problem that can be physical, psychological and/or social in nature.

International research into school absenteeism has traditionally focussed on unauthorised absenteeism, such as truancy, rather than sickness absence. There is literature on a Dutch intervention to address problematic sickness absence in secondary education and vocational education called ‘Medical Advice for Sick reported Students’ (MASS). However, there is no such intervention for primary education, even though absenteeism patterns can start in primary education and, if there is problematic sickness absence, underlying problems may also have begun. Addressing sickness absence in primary education could provide early opportunities to improve children’s long-term health and well-being. The aim of this thesis is to develop, implement and evaluate an intervention to address sickness absence among primary school pupils.

Addressing school absenteeism is not a new concept – a policy aiming to reduce school absenteeism was implemented as early as the 19th century and focused on

legislation by prohibiting child labour and making school attendance mandatory. In the 20th century, the focus of policy and the literature was on the educational and psychological problems related to unauthorised absenteeism, such as school refusal problems. More recently, the perspective on school absenteeism has changed in policy and the literature to focus on improving school attendance, rather than strictly addressing unauthorised absenteeism. Improving school attendance also includes paying attention to sickness absence.

Sickness absence in schools was not seen as a public health concern originally, but rather a problem for education. This is in contrast to sickness absence among employees, which has a long-standing tradition in public health research. Now, through the realization that sickness absence impacts education and thus health, and with the knowledge gained from MASS, it seems clear that sickness absence is a problem for public health, too.

The lessons learned from the school absenteeism history, sickness absence among employees and sickness absence among secondary education students in the original MASS intervention were that focusing on punishment of unauthorised absenteeism is not enough to improve school attendance; attention needs to be paid to sickness absence as well. Also, addressing sickness absence requires a broad biopsychosocial-ecological perspective and collaboration, which is incorporated in the MASS approach. To be able to apply MASS in primary education, the MASS approach required substantial adjustments because of the different organisation of the schools, smaller school sizes and, due to the young age of pupils, the increased involvement of parents compared to secondary education.

This thesis used all six steps of the intervention mapping (IM) approach to systematically develop and evaluate the MASS-PS intervention to reduce sickness absence among primary school pupils by tackling the underlying problems, in an effort to prevent the negative consequences of sickness absence for the child. IM incorporates empirical, theoretical and practical knowledge to design, implement and evaluate an intervention for health promotion.

Chapter 2: Registered school absenteeism and extensive sickness absence

To develop this intervention, it was first necessary to gain more insight into sickness absence in primary schools in the Netherlands and how sickness absence relates to other types of absenteeism. As a part of the needs assessment (step 1 of IM), the prevalence of different types of absenteeism among primary school pupils and how they relate to the pupils' and school characteristics were examined in **Chapter 2**. In the West-Brabant region of the Netherlands, eight mainstream primary schools and

six special schools for primary education participated with over 3000 pupils in total. These schools' absenteeism registries from the school year 2015-2016 were analysed retrospectively.

In a school year, most pupils miss a day of school or more, most often being reported as sick: 75% of pupils in mainstream primary schools and 71% of pupils in special schools had missed at least one day of school due to sickness absence. Extensive sickness absence, defined as more than 4 periods of sickness absence or more than 9 days of sickness absence, occurred frequently with 13% and 23% of pupils, respectively, missing that much school or more in the different school types. Extensive sickness absence was associated with other types of absences too, such as tardiness and truancy, showing that these pupils missed even more days of school than their peers. This showcases how substantial the problem of extensive sickness absence appears to be and suggests that action is needed to prevent adverse effects on children's development.

Chapter 3: Stakeholders' views

As another part of the needs assessment (step 1 of IM), stakeholders' views on sickness absence in primary education were examined with the aim to understand the current practice and unveil opportunities and challenges in addressing sickness absence among primary school pupils. This is presented in **Chapter 3**. Parents, school professionals, child and youth healthcare professionals and school attendance officers from the regions of Amsterdam and West-Brabant in the Netherlands were asked about their experiences and needs in six semi-structured focus group interviews.

The overarching theme was aiming for the child's well-being. Each focus group interview started with low awareness among parents and school professionals of sickness absence as a threat to this well-being, but their awareness grew rapidly during the interviews. The participating stakeholders regarded problematic sickness absence as complex due to a wide variety of causes: problems may be related to the child itself, such as medical or psychological problems, or be situated at home or at school. Stakeholders felt that collaboration with each other was required to tackle the problem of sickness absence. In the current approach, schools only occasionally used planned steps and based the identification of problematic sickness absence on gut feeling rather than on any agreed-upon criteria.

To be able to systematically address sickness absence and thus improve the health and well-being of children, stakeholders felt the need for a clearly structured approach, including monitoring of sickness absence of all pupils, identifying problematic absence and promoting collaboration with other stakeholders. Due to the wide variety of

possible underlying problems, an approach should allow for tailoring solutions to the individual child.

Chapter 4: Development of MASS-PS

To develop an intervention to address sickness absence in primary education, steps 1 - 4 of the intervention mapping approach were used based on the literature, knowledge gained in the previous chapters and knowledge from the original MASS intervention. This is described in **Chapter 4**. In step 1, a logic model of the problem was created, which is an overview of the possible factors impacting the problems of sickness absence among primary school pupils. In step 2, a logic model of change was created to determine what changes were needed to reduce sickness absence. In step 3, a theoretical basis and practical strategies were determined. In step 4, practical support materials were designed, and two pre-tests of the materials were performed. Steps 5 and 6 are represented in the evaluation of the implementation and the effectiveness of MASS-PS in chapters 5 and 6.

In this way, MASS was systematically adapted to primary education, creating MASS-PS (MASS for primary school). The main changes compared with MASS were the adjustment of the threshold for extensive sickness absence to more than six days or more than three periods of sickness absence in a schoolyear, consultations between teachers and the attendance coordinator, and the addition of two experts, namely the social worker and the remedial educationalist. With MASS-PS, extensive sickness absence is framed as a 'red flag' for underlying problems that can be systematically identified and addressed through collaboration.

Chapter 5: Process Evaluation

The process evaluation (step 5 of IM) of MASS-PS, in **Chapter 5**, aimed to examine the implementation and usability of MASS-PS in the primary schools. Different aspects of using MASS-PS are highlighted: the intervention, the user, the organisation and the sociopolitical context. MASS-PS was implemented and evaluated in 29 primary schools in the West-Brabant region of the Netherlands, during three school years (2017–2020). Attendance coordinators from the different schools were interviewed in both focus group interviews and over 200 individual conversations. Content analysis was used to study the transcripts from the focus group interviews and logbooks made during the individual meetings.

During the first year of the study, 2017, the uptake was low. Changes were made to improve the uptake. First, a medical consultation option with a child and youth healthcare physician for the attendance coordinator was added. Second, the identification of pupils with extensive sickness absence was made more manageable

for school professionals by increasing the threshold for extensive sickness absence. Instead of more than six days or three periods of sickness absence in a schoolyear the threshold was set at to more than nine days or more than four periods. After these changes, the attendance coordinators generally considered MASS-PS as compatible and relevant, and the intervention increased their self-efficacy in addressing absenteeism in the school. They also recognised that, by using a threshold, they identified pupils that would otherwise have been overlooked, and they reported improvements in the pupils' well-being. An important organisational barrier was the shortage of teaching staff. It seemed, based on the process evaluation, that MASS-PS was implemented successfully in schools.

Chapter 6: Effect evaluation

The effect of MASS-PS on registered sickness absence is addressed in **Chapter 6** (step 6 of IM). Sickness absence was studied between August 2017 and July 2020. The school absenteeism registries of 17 schools that used MASS-PS in the West-Brabant region of the Netherlands were compared to the absenteeism of pupils in eight control schools in the region of South-Limburg. The aim was to evaluate the effectiveness of MASS-PS on the registered sickness absence frequency and duration among primary school pupils. Using descriptive analysis and multilevel analysis, the changes in sickness absence among pupils were determined.

This study shows some promising initial results of the MASS-PS intervention as pupils in the intervention group with extensive sickness absence in the school year 2018–2019 had fewer missed days of school during the school year 2019–2020. These pupils did not have fewer periods of sickness absence, nor did the intervention schools have fewer pupils with extensive sickness absence. The medical advice offered by the child and youth healthcare physicians was utilised for 48 out of 650 pupils with extensive absenteeism. This may point to an implementation problem for the steps of MASS-PS involving external experts.

This study showed that MASS-PS had an effect on sickness absence in general in the target group. However, follow-up research is needed after further implementation and, possibly, greater utilisation of the medical advice offered by child and youth healthcare physicians.

The intervention: MASS-PS

The MASS-PS intervention was developed in chapter 4 and adjusted based on the process evaluation in chapter 5. It starts with attention from, and registration by, school professionals when a pupil is absent. The attendance coordinator identifies pupils with extensive sickness absence based on a threshold and then discusses the

identified pupils with their teacher to determine the best course of action. They either know enough to adequately provide support or they need to contact the parents. The conversation with the parents is done in a caring manner, rather than controlling, and is focused on collaboration and finding solutions for underlying problems. The parents and school professionals decide whether to involve an external expert: a child and youth healthcare professional, a remedial educationalist or a social worker. Before referral, it is also possible for the school professionals to contact the child and youth healthcare physician to brainstorm options for a particular pupil. Together with everyone involved, the external expert examines the underlying problems and creates a management plan to optimise school attendance, health and well-being. The plan is evaluated and the attendance, as well as any care initiated, is monitored by those involved.

Chapter 7: General discussion

The findings of all the previous chapters are considered in the general discussion in **Chapter 7**. This thesis aimed to develop and evaluate an intervention to address extensive sickness absence among primary school pupils. The needs assessment showed that extensive sickness absence occurs frequently in Dutch primary schools and that these pupils miss even more days of school due to other types of absenteeism. This last finding suggests that pupils with extensive sickness absence are more at risk of negative consequences than their peers, as each missed school day may have negative effects through the missed lessons and missed social interaction. The needs assessment also showed that a structured approach was lacking and that a new approach to sickness absence should include collaboration and focus on a shared goal: improving school attendance in an effort to improve child well-being. The collaboration needs to be multidisciplinary to be able to tackle a wide variety of underlying problems. Collaboration between the parents and the school is crucial because the research showed that there can be a mismatch of views between parents and school professionals as to the cause of the sickness absence, and school professionals may not be aware of their importance in tackling absenteeism.

MASS-PS targets the conscious behaviour of the user, such as the attendance coordinator in school, based on the integrated change model, through awareness of sickness absence as a threat to child well-being and through the knowledge, structured steps, communication and collaboration needed to address absenteeism. The evaluation of MASS-PS found that adoption was good, but the transition from adoption to implementation was challenging, and therefore changes were needed. This may have been due to unconscious behaviour or collaboration issues that were not addressed through the integrated change model. The changes made during the research period were aimed at facilitating the use of the intervention and collaboration.

One of the changes made was to adjust the threshold for extensive sickness absence, from more than six days or more than three periods of sickness absence in a school year in 2017 to more than nine days and four periods from July 2018 onwards. This helped to reduce the number of pupils identified to a more manageable number for schools, but also raises the question of whether the threshold now selects the pupils most at risk of underlying problems or only some of them, namely, those with the most absenteeism.

Another change was to add a consultation function for the attendance coordinator to consult with a child and youth healthcare physician. This allowed attendance coordinators to brainstorm the best options for a child.

After the changes were made to MASS-PS in the first year of implementation, attendance coordinators shared that MASS-PS was usable, helped to identify pupils that were otherwise overlooked and seemed to improve pupils' well-being, and implementation in the school appeared to be improved. The implementation of the MASS-PS steps involving external experts needs further attention and study, as the effect evaluation showed that very few pupils were referred to the child and youth healthcare physician, one of the external experts. The implementation could focus more on creating awareness among school professionals of the possible benefits of medical advice for the pupil and for the school.

The strengths of this thesis were the wide variety of qualitative and quantitative data and the practice-based approach with stakeholder input to improve the adoption and usability of the developed intervention. All six steps of the intervention mapping approach were used to develop MASS-PS, and this study showed how important it is to evaluate the implementation and effectiveness of a newly developed intervention: an intervention is not 'finished' once it has been developed, but needs to be adapted and improved further after use in practice.

A limitation of this thesis is the focus on the implementation of MASS-PS in schools and less on the collaboration with external experts. This seems to have resulted in a limited number of referrals to the child and youth healthcare physician and may indicate implementation failure of that step of the intervention.

Recommendations for further research include studying the threshold that best selects pupils at risk of negative consequences, examining the views of more parents, as well as pupils, studying the underlying problems and required solutions further to ensure adequate care can be given in the individual trajectories for pupils and, finally, examining the long-term effect of MASS-PS when it is fully implemented.

The most important recommendation for practice is to address extensive sickness absence in all primary schools with a structured approach that includes collaboration, medical advice, a collective approach and tailor-made trajectories appropriate for the pupil's problems. MASS-PS can be that approach. Further improvements would be recommended when addressing sickness absence: Clear guidelines on the registration and terminology of absenteeism for schools, a better implementation for MASS-PS with attention paid to the benefits for the pupil and schools of the medical advice from the child and youth healthcare physician and embedding the intervention in the school policies to ensure continuation even if the key figure supporting MASS-PS leaves.

Conclusions

The outcome of this thesis is a developed and evaluated intervention to address extensive sickness absence among primary school pupils: MASS-PS. MASS-PS was easily adopted in practice. After making changes to improve implementation in schools, it was deemed usable and seemed to result in positive benefits, for example that attendance coordinators perceive a better handle on sickness absence and increased well-being of pupils. Considering the challenges in the implementation, the positive effects found on the registered sickness absence are promising. The process and effect evaluations show that more research is needed with a longer follow-up, after better implementation, to test whether MASS-PS can further reduce extensive sickness absence and, ultimately, improve long-term educational achievement and health.

Samenvatting proefschrift

“De ontwikkeling en evaluatie van de ‘Medische Advisering Ziekgemelde Leerling Primair Onderwijs’ (M@ZL-PO) interventie”

Hoofdstuk 1: Algemene inleiding

Onderwijs is cruciaal voor de ontwikkeling en gezondheid van kinderen. In de landen zoals Nederland gaan de meeste kinderen dagelijks naar school, maar sommige kinderen missen veel schooldagen. Dit schoolverzuim is zowel een probleem voor het onderwijs, als voor de publieke gezondheid omdat het veroorzaakt kan worden door een onderliggend probleem, zoals een chronische ziekte, depressieve klachten, pesten of problemen in de thuissituatie. Zowel het onderliggende probleem als het verzuim zelf, kunnen negatieve gevolgen hebben voor het kind, zoals het missen van contact met vrienden en, uiteindelijk, ook afglijden in schoolniveau en voortijdig schoolverlaten. Dit kan vervolgens impact hebben op de mogelijkheden voor het kind om te participeren in de maatschappij en op de toekomstige arbeidsmogelijkheden en sociaaleconomische status. De sociaaleconomische status van een persoon is een sterke voorspeller voor gezondheid en heeft zelfs een relatie met de gezondheid en onderwijskansen voor diens kinderen. Schoolverzuim kan zo een intergenerationeel effect krijgen.

Het meest voorkomende type schoolverzuim is ziekteverzuim: wanneer een kind wordt ziekgemeld. Dat kan bijvoorbeeld vanwege een lichamelijke oorzaak zoals de griep of een gebroken been, maar ook vanwege een psychisch of sociaal probleem, bijvoorbeeld naar aanleiding van pesten of scheiding van ouders. De meeste kinderen worden maar één of twee dagen ziekgemeld in een schooljaar, maar sommige kinderen worden vaak of langdurig ziekgemeld en die kinderen hebben meer risico op de negatieve gevolgen van verzuim.

Vanuit de internationale literatuur is de aandacht vooral uitgegaan naar ongeoorloofd verzuim zoals spijbelen, in plaats van naar ziekteverzuim, dat door de leerplichtwet als geoorloofd wordt bestempeld. Het aanpakken van ziekteverzuim en onderliggende problemen is in Nederland wel onderzocht namelijk bij de ontwikkeling en evaluatie van de interventie ‘Medische Advisering van de Ziekgemelde Leerling’ (M@ZL) voor het voortgezet onderwijs en middelbaar beroepsonderwijs. Er is echter nog geen interventie ontwikkeld die ziekteverzuim van leerlingen in het primair onderwijs (PO) kan aanpakken, terwijl ziekteverzuim patronen en onderliggende problemen wel al kunnen beginnen in het PO. Het aanpakken van ziekteverzuim in het PO kan kansen creëren om vroegtijdig de gezondheid en het welzijn van kinderen

te verbeteren en problemen te voorkomen. Het doel van dit proefschrift was om een interventie, die ziekteverzuim bij basisschoolleerlingen kan aanpakken, te ontwikkelen, implementeren en evalueren.

Schoolverzuim aanpakken is geen nieuw concept. Al in de 19^e eeuw was er beleid gericht op het verminderen van verzuim. De focus was toen vooral wetgeving, door het verbieden van kinderarbeid en het instellen van de leerplicht. In de 20^e eeuw veranderde de aandacht van beleid en van onderzoek naar de onderwijskundige en psychologische problemen die ongeoorloofd verzuim veroorzaken, zoals angst en schoolweigeren. Het werd steeds duidelijker dat het straffen van kinderen en ouders bij verzuim slechts een beperkt effect heeft op de terugkeer naar school. Mede daarom is recent is de aandacht van beleid en onderzoek opnieuw verschoven, namelijk van het aanpakken van ongeoorloofd verzuim naar het verbeteren van de aanwezigheid op school. Om die aanwezigheid te verbeteren is het nodig om ziekteverzuim aan te pakken.

Ziekteverzuim van leerlingen werd lang gezien als een onderwerp voor de onderwijssector en niet als een probleem dat de publieke gezondheidszorg betreft. Totdat de relatie tussen schoolverzuim en gezondheid recent duidelijk werd beschreven bij de ontwikkeling van M@ZL. Ziekteverzuim van werknemers daarentegen, kent wel een lange traditie in onderzoek als een probleem dat de publieke gezondheidszorg betreft. Uit onderzoek in de arbeidsgeneeskunde is duidelijk geworden dat de aanpak van ziekteverzuim om een brede biopsychosociale-ecologische blik vraagt en om multidisciplinaire samenwerking. Deze factoren zijn ook meegenomen bij de ontwikkeling van M@ZL voor het VO en MBO. Om M@ZL te kunnen gebruiken voor het primair onderwijs, zijn er substantiële aanpassingen nodig omdat de scholen kleiner zijn en anders georganiseerd zijn dan VO scholen en omdat basisschoolleerlingen jonger zijn en er dus een grotere betrokkenheid van ouders nodig is.

In dit proefschrift worden alle zes stappen van de methode ‘intervention mapping’ (IM) gebruikt om systematisch M@ZL voor het primair onderwijs (M@ZL PO) te ontwikkelen en te evalueren. Het doel van M@ZL PO is het ziekteverzuim van basisschoolleerlingen te verminderen door de onderliggende problemen op te sporen en uiteindelijk negatieve gevolgen voor de gezondheid en het welzijn van de kinderen te voorkomen. IM combineert literatuur, theorie en praktische kennis om tot een gezondheidsbevorderende interventie te komen en die te kunnen implementeren en evalueren.

Hoofdstuk 2: Geregistreerd schoolverzuim en zorgwekkend ziekteverzuim

Voor het ontwikkelen van M@ZL-PO was het eerst belangrijk om meer inzicht te krijgen in ziekteverzuim op basisscholen in Nederland, als onderdeel van de behoefteanalyse

(stap 1 van IM). In **hoofdstuk 2** werd onderzocht hoeveel ziekteverzuim voorkomt en hoe zorgwekkend ziekteverzuim gerelateerd is aan andere soorten verzuim. Zorgwekkend ziekteverzuim werd gedefinieerd als meer dan 4 keer ziekgemeld en meer dan 9 dagen ziekgemeld in een schooljaar. In de regio West-Brabant in Nederland hebben 8 gewone basisscholen en 6 speciale scholen voor basisonderwijs (SBO) met samen meer dan 3.000 leerlingen, meegedaan aan dit onderzoek. De verzuimregistratie van het schooljaar 2015-2016 werd retrospectief geanalyseerd.

De meeste kinderen worden weleens ziekgemeld: 75% van de leerlingen op gewone basisscholen en 71% van de leerlingen op de SBO scholen werden één of meer dagen ziekgemeld in het schooljaar. Zorgwekkend ziekteverzuim kwam vaak voor: bij 13% van de leerlingen op gewone basisscholen en bij 23% van de leerlingen op de SBO scholen. Zorgwekkend ziekteverzuim was bovendien gerelateerd aan alle andere soorten verzuim door doktersbezoeken, te laat komen of spijbelen, wat betekent dat kinderen die al veel zijn ziekgemeld, ook nog eens extra onderwijs missen. Dit illustreert hoe belangrijk het probleem van zorgwekkend ziekteverzuim kan zijn en suggereert dat actie nodig is om negatieve gevolgen voor de ontwikkeling van kinderen te voorkomen.

Hoofdstuk 3: Standpunten van stakeholders

Om de behoeften van stakeholders in kaart te brengen werden focusgroep interviews gehouden, gepresenteerd in **hoofdstuk 3** (stap 1 van IM). Hierbij was specifiek aandacht voor de huidige werkwijze, de mogelijkheden en de uitdagingen die stakeholders zien met betrekking tot de aanpak van ziekteverzuim van basisschoolleerlingen. Er zijn zes semigestructureerde focusgroep interviews gehouden met ouders, school medewerkers, jeugdgezondheidszorgmedewerkers en leerplichtambtenaren uit de Nederlandse regio's Amsterdam en West-Brabant.

Het overkoepelende thema in de interviews was het welzijn van het kind. Bij de aanvang van de interviews waren de ouders en schoolmedewerkers zich weinig bewust dat ziekteverzuim een probleem is. De bewustwording nam snel toe gedurende het gesprek. De deelnemende betrokkenen vonden ziekteverzuim een complex probleem vanwege de grote variëteit aan mogelijke oorzaken: er kunnen problemen van het kind zijn, zoals medische of psychische problemen, of problemen die thuis of op school liggen. De deelnemers vonden daarom dat samenwerking nodig was om ziekteverzuim aan te kunnen pakken.

In de huidige aanpak miste structuur: alle scholen deden wel iets met ziekteverzuim maar dat was gebaseerd op intuïtie en niet op criteria en er was geen sprake van een vaste volgorde van stappen. Om ziekteverzuim te verminderen, en daarmee de

gezondheid en het welzijn van kinderen te verbeteren, is een gestructureerde aanpak noodzakelijk. Deze aanpak omvat: aandacht voor verzuim in de school, communicatie over verzuim vanuit zorg en niet controle, het monitoren van verzuim voor alle leerlingen, het identificeren van problematisch verzuim en het stimuleren van multidisciplinair samenwerken. Gezien de vele mogelijke onderliggende problemen bij zorgwekkend ziekteverzuim, is een interventie nodig die ruimte geeft voor een individuele aanpak voor elke leerling.

Hoofdstuk 4: De ontwikkeling van M@ZL-PO

Om een interventie te ontwikkelen die systematisch ziekteverzuim op het primair onderwijs kan aanpakken zijn de stappen 1 tot en met 4 gebruikt van de IM methode, gebaseerd op literatuur, de kennis uit de vorige hoofdstukken en de kennis van de originele M@ZL methode. Dit wordt beschreven in **hoofdstuk 4**. In stap 1 werd een logisch model van het probleem opgesteld, dit model geeft een overzicht van de mogelijke factoren die ziekteverzuim beïnvloeden. In stap 2 werd een logisch model van verandering opgesteld, dit model geeft een overzicht van gedragsveranderingen die mogelijk nodig zijn om ziekteverzuim aan te pakken. In stap 3 werden een theoretische basis, het 'integrated change model', en praktische strategieën gekozen. In stap 4 werden ondersteunende materialen voor M@ZL PO, zoals een stappenplan, ontwikkeld en werden 'pre-tests' gedaan om de materialen te testen. Stap 5 en 6 van IM zijn het plannen van de proces- en effectevaluatie en worden in hoofdstuk 5 en 6 beschreven.

Met de eerste 4 stappen van IM is een versie van M@ZL ontwikkeld voor het PO. De belangrijkste aanpassingen ten opzichte van M@ZL in het voortgezet onderwijs waren een hogere drempel voor zorgwekkend ziekteverzuim van meer dan zes dagen of meer dan drie keer ziekgemeld in een schooljaar, de toevoeging van een overleg tussen de leerkracht en de verzuimcoördinator in school en de mogelijkheid om naast de jeugdarts, ook een jeugdprofessional of orthopedagoog te kunnen consulteren. De collectieve aanpak van M@ZL in het voortgezet onderwijs werd behouden, met communicatie vanuit zorg in plaats van controle en aandacht voor registratie van verzuim en identificatie van kinderen met zorgwekkend ziekteverzuim. Ook de inzet van de jeugdarts voor individuele kinderen is behouden voor M@ZL PO. Met M@ZL PO kan zorgwekkend ziekteverzuim gezien worden als een signaal voor onderliggende problemen; het verzuim kan systematisch gesignaleerd worden en aangepakt middels samenwerking.

Hoofdstuk 5: Procesevaluatie

De procesevaluatie van M@ZL PO (Stap 5 van IM) wordt beschreven in hoofdstuk 5, hierbij wordt de implementatie en bruikbaarheid van M@ZL PO in scholen geëvalueerd.

M@ZL werd geïmplementeerd en onderzocht bij 29 basisscholen in West-Brabant gedurende 3 schooljaren (augustus 2017- juli 2020). De verzuimcoördinatoren van verschillende scholen, degene die verantwoordelijk waren voor M@ZL PO in de school, werden geïnterviewd in zes focusgroep interviews en in meer dan 200 individuele gesprekken waarvan logboeken werden bijgehouden. De analyse van de focusgroep interviews en logboeken is gedaan met inhoudsanalyse gebaseerd op verschillende aspecten van het gebruik van interventies: de interventie zelf, de gebruiker, de organisatie en de sociaal-politieke context.

Gedurende het eerste jaar van de studie (2017) bleek dat de interventie weinig werd gebruikt. Daarom werden veranderingen aangebracht, zoals het toevoegen van een consultatieoptie met de jeugdarts voor de verzuimcoördinatoren en het verhogen van de drempel voor zorgwekkend verzuim van meer dan zes dagen of meer dan drie keer ziekgemeld naar meer dan negen dagen of vier keer ziekgemeld. Na de veranderingen werd M@ZL PO door de verzuimcoördinatoren gezien als relevant voor het verbeteren van het welzijn van de leerlingen, passend bij de organisatie van de school. Bovendien viel het hun op dat er kinderen werden gezien die zonder M@ZL PO gemist zouden zijn en dat de interventie ze meer grip gaf op ziekteverzuim. Een belangrijke barrière op het gebied van de organisatie is het tekort aan leerkrachten. Op basis van de procesevaluatie, leek M@ZL PO succesvol geïmplementeerd te zijn op de scholen.

Hoofdstuk 6: Effectevaluatie

Het effect van M@ZL PO op geregistreerd ziekteverzuim werd onderzocht in **hoofdstuk 6** (Stap 6 van IM). De verzuimregistraties van augustus 2017 tot en met juli 2020 van 17 basisscholen in de regio West-Brabant die M@ZL PO gebruikten werden vergeleken met de verzuimregistratie van acht controle basisscholen in Zuid-Limburg. Het doel van de studie was om de effectiviteit van M@ZL PO op het terugdringen van ziekteverzuim van basisschoolleerlingen te onderzoeken. Dit wordt gedaan met beschrijvende analyse en multilevel analyse.

Dit onderzoek laat de eerste resultaten zien van M@ZL PO: kinderen met zorgwekkend ziekteverzuim in 2018-2019 op interventie scholen misten minder dagen school in het schooljaar 2019-2020 dan de kinderen met zorgwekkend ziekteverzuim op de controle scholen. Deze kinderen werden overigens niet minder vaak ziekgemeld en er waren niet minder kinderen met zorgwekkend ziekteverzuim op de interventie scholen dan op de controlescholen. Daarnaast werd op de interventiescholen gevonden dat het medische advies voor individuele kinderen slechts werd ingezet voor 48 van de 650 leerlingen met zorgwekkend ziekteverzuim. Dit zou kunnen wijzen op problemen in de implementatie, waarbij met name dit onderdeel waarbij externe professionals zijn

betrokken, niet goed geïmplementeerd lijkt te zijn.

Het onderzoek in hoofdstuk 6 laat zien dat M@ZL PO mogelijk een effect heeft gehad op ziekteverzuim in de doelgroep (kinderen met zorgwekkend ziekteverzuim). Echter, meer onderzoek is nodig om een volledig beeld van de effectiviteit van M@ZL PO te krijgen, waarbij een vollediger implementatie en meer gebruik van het medische advies van de jeugdarts zou kunnen helpen.

De interventie: M@ZL PO

De ontwikkeling van de interventie in hoofdstuk 4 en de aanpassingen die nodig waren tijdens de procesevaluatie in hoofdstuk 5 hebben geleid tot een bruikbaar prototype van M@ZL PO. Het begint met de aandacht voor, en registratie van, verzuim in school. De verzuimcoördinator identificeert leerlingen aan de hand van vaste criteria voor zorgwekkend ziekteverzuim en bespreekt die leerlingen dan met de eigen leerkracht om informatie uit te wisselen en de volgende stappen te bepalen. Het kan zijn dat zij met elkaar voldoende weten om goede ondersteuning te bieden, bijvoorbeeld omdat ze al regelmatig met ouders afstemmen. Als dat niet zo is, dan gaan ze in gesprek met ouders. Het gesprek met ouders gebeurt altijd vanuit zorg, niet vanuit controle en heeft als doel om samen oplossingen te vinden voor de problemen die het verzuim veroorzaken. De schoolmedewerker en ouders bepalen samen of externe hulp wordt ingezet, dat kan bij de jeugdarts, de jeugdprofessional of orthopedagoog. De verzuimcoördinator kan ook overleggen met de jeugdarts om samen opties te bedenken die bij de leerling zouden kunnen passen. Wanneer een externe professional wordt ingezet, zal die de oorzaak van het verzuim onderzoeken en samen met alle betrokkenen een plan van aanpak maken om school aanwezigheid te optimaliseren. Dat plan wordt geëvalueerd en de aanwezigheid en de eventueel ingezette zorg worden gemonitord.

Hoofdstuk 7: Algemene discussie

De beschouwing van de bevindingen van de vorige hoofdstukken wordt beschreven in **hoofdstuk 7**. Dit proefschrift had als doel om een interventie te ontwikkelen en evalueren voor het aanpakken van ziekteverzuim van basisschoolleerlingen. Uit de behoefteanalyse bleek dat zorgwekkend ziekteverzuim veel voorkomt op Nederlandse basisscholen en dat deze leerlingen nog eens extra schooldagen missen door andere vormen van verzuim. Deze bevinding suggereert dat leerlingen met zorgwekkend ziekteverzuim meer risico lopen op negatieve consequenties dan hun klasgenoten, omdat elke gemiste dag een negatief effect kan hebben op het welzijn en de leerontwikkeling door de gemiste lessen en het gemiste contact met klasgenoten. De behoeftepeiling bij stakeholders liet zien dat een structurele aanpak voor ziekteverzuim mist. Een nieuwe aanpak vraagt om samenwerking tussen stakeholders

en om een focus op het gedeelde doel: verbeteren van aanwezigheid van leerlingen om uiteindelijk het welzijn van het kind te verbeteren. De samenwerking moet multidisciplinair zijn omdat er vele verschillende oorzaken van ziekteverzuim zijn. De samenwerking tussen schoolmedewerkers en ouders bleek ook heel belangrijk hierin, omdat het onderzoek liet zien dat er verschillen zijn in de zienswijze van ouders en schoolmedewerkers over de oorzaak van het verzuim en hoe het aangepakt moet worden. Mogelijk zijn schoolmedewerkers zich niet bewust van de belangrijke rol die zij kunnen hebben bij het aanpakken van schoolverzuim en dat de consequenties van het verzuim ook effect hebben op de leerontwikkeling.

M@ZL PO richt zich op de bewust gedrag van de gebruiker, bijvoorbeeld de verzuimcoördinator van de school, gebaseerd op het *integrated change model*, via de bewustwording dat ziekteverzuim een probleem is voor het welzijn van het kind en via de kennis, de gestructureerde stappen, de communicatie en de samenwerking die nodig zijn om het ziekteverzuim te pakken. De evaluatie van M@ZL PO liet zien dat de adoptie goed was, maar de transitie van adoptie naar implementatie zorgde voor uitdagingen en daarom zijn er veranderingen gemaakt. Mogelijk heeft dit te maken met onbewust gedrag of samenwerkingsproblemen die niet via het integrated change model werden aangepakt. De aanpassingen waren gericht op het vergemakkelijken van het gebruik van de interventie en de samenwerking.

Een van de veranderingen die is gemaakt is het aanpassen van de drempel voor zorgwekkend ziekteverzuim van meer dan zes dagen of meer dan drie keer ziekgemeld in een schooljaar naar meer dan negen dagen of vier keer ziekgemeld. Door de drempel te verhogen was het minder arbeidsintensief om kinderen te signaleren en daarmee bruikbaar voor de scholen. Dit roept echter wel de vraag op of deze drempel nu ideaal is voor het identificeren van alle kinderen die risico lopen op de negatieve gevolgen van verzuim, of dat alleen een selectie van deze kinderen gevonden wordt, namelijk degenen met het meeste verzuim.

Een andere verandering was het toevoegen van een consultatiefunctie – een overleg tussen de verzuimcoördinator en jeugdarts. Dit gaf verzuimcoördinatoren de kans om met de jeugdarts te brainstormen over de best passende opties voor een ziekgemelde leerling.

Na deze veranderingen leek de implementatie verbeterd te zijn. Verzuimcoördinatoren vonden dat M@ZL PO goed bruikbaar was, dat het hielp om leerlingen te identificeren die anders niet opgevallend waren en dat M@ZL PO hielp om het welzijn van leerlingen te verbeteren. De implementatie van de stappen van M@ZL PO waarbij de externe professionals worden ingezet vraagt nog aandacht, omdat in de effectevaluatie

naar voren kwam dat maar weinig kinderen werden verwezen naar de jeugdarts. De implementatie kan verbeterd worden door schoolmedewerkers meer bewust te maken van de mogelijke voordelen van het medische advies voor de leerling en voor de school. Nader onderzoek moet duidelijk maken of er nog praktische barrières zijn voor de doorverwijzing.

Sterke onderdelen van dit proefschrift zijn de brede variatie van kwalitatieve en kwantitatieve data en de praktijk gestuurde aanpak met uitgebreide stakeholder betrokkenheid en nadruk op de bruikbaarheid van de interventie. Daarnaast zijn in dit onderzoek alle stappen van IM gebruikt om M@ZL PO te ontwikkelen en evalueren. Hiermee laat dit onderzoek zien hoe belangrijk het is om de implementatie en het effect te evalueren: een interventie is niet 'af' na de ontwikkeling, verdere aanpassingen en verbeteringen komen aan het licht tijdens de implementatie en evaluatie.

Een beperking in dit onderzoek is de focus op implementatie in de scholen geweest. Hierdoor is er mogelijk minder aandacht geweest voor de samenwerking met externe professionals, vooral de jeugdarts. Doorverwijzing naar de jeugdarts lijkt niet goed geïmplementeerd te zijn en dat heeft de gevonden effecten mogelijk beperkt.

Aanbevelingen voor verder onderzoek zijn: het bestuderen van de drempel voor zorgwekkend ziekteverzuim, het verder onderzoeken van de ervaringen van ouders en ook van kinderen zelf, de onderliggende oorzaken van ziekteverzuim beter in kaart brengen, nagaan of M@ZL PO bij bepaalde problemen meer effect heeft dan bij andere problemen, nagaan welke barrières er zijn voor het doorverwijzen naar de jeugdarts en het effect van M@ZL PO onderzoeken nadat het volledig is geïmplementeerd.

De belangrijkste aanbeveling voor de praktijk is om ziekteverzuim in alle basisscholen aan te pakken met een gestructureerde methode die gebruik maakt van samenwerking, medisch advies en die de mogelijkheid biedt om zorg op maat in te zetten dat passend is voor het kind met zorgwekkend ziekteverzuim. M@ZL PO kan die methode zijn. Verdere verbeteringen die kunnen helpen bij de aanpak van ziekteverzuim zijn duidelijke richtlijnen voor scholen met betrekking tot terminologie en registratie. Voor M@ZL PO wordt een verbeterde implementatie aangeraden met extra aandacht voor de voordelen van het medische advies bij de jeugdarts voor de leerling en de school, en aandacht voor de borging in het schoolbeleid zodat de interventie ook doorgaat als een sleutelfiguur de school verlaat.

Conclusies

Dit proefschrift resulteerde in een ontwikkelde en geëvalueerde interventie om zorgwekkend ziekteverzuim bij basisschoolleerlingen aan te pakken: M@ZL PO. De adoptie van M@ZL PO in de praktijk was goed en, na aanpassingen tijdens de implementatie, bleek de interventie goed toe te passen in de praktijk en het gebruik gaf voordelen voor verzuim coördinatoren zoals meer grip op verzuim en een ogenschijnlijke verbetering in het welzijn van kinderen. Het is veelbelovend dat, ondanks een uitdagende implementatie, een positief effect gevonden kon worden op het aantal dagen geregistreerd verzuim van kinderen met zorgwekkend ziekteverzuim. Zorgwekkend ziekteverzuim in het basisonderwijs werd gedefinieerd als meer dan negen dagen of meer dan vier keer per jaar. Verder onderzoek na een vollediger implementatie, kan nog beter nagaan in hoeverre M@ZL PO de aanwezigheid in school en, op de lange termijn, de onderwijskansen en gezondheid van kinderen kan verbeteren.

About the author

Esther Pijl was born on April 27th 1986, in Noordhorn, Groningen, The Netherlands. She went to primary school at the Molshoop in Noordhorn and secondary school at the Augustinus College in Groningen between 1998 and 2004. After one year (a propodeuse) of studying pharmacy at Groningen University, she switched to medicine and completed her medicine studies with a bachelor's degree at Hasselt University, Belgium and a master's degree at Maastricht University, the Netherlands in 2011.



She went on to work in paediatrics in 2012 and 2013, after which she found her purpose within the Child and Youth healthcare. While working as a Child and Youth healthcare physician at the GGD West-Brabant she studied at TNO and the NSPOH between 2014 and 2018 to become a medical specialist: Public Health MD with the specialisation of child and youth healthcare (Arts Maatschappij en Gezondheid, profiel: jeugdgezondheidszorg).

In December 2016, Esther started to work on the research in this thesis as an external PhD-student at Social Medicine faculty, FHML, CAPHRI, Maastricht University. Work on the thesis was briefly suspended during the Covid-19 pandemic, due to the need for public health MD's in the Covid-teams at the GGD, but swiftly resumed alongside her regular work as a Public health MD.

Esther currently still works as a Public health MD with the specialization child and youth healthcare at the GGD West-Brabant. She works with children of all ages, trains new doctor's and is part of the GGD's professional advisory board with special attention for school attendance problems and scientific research.

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