

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

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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 tailormade 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.

