

Article

# Web-Based Parenting Support: Development of the COPING Confident Parenting Programme

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**Abstract:** Parents have the most significant impact on children’s development and the key parenting factors that promote child development and wellbeing are well known. Furthermore, many behavioural, social and emotional problems in children are associated with poor parenting practices. Parenting interventions that address parental skill deficits and teach positive parenting principles based on social learning theory are effective and are the recommended treatment for conduct disorder. Alongside the development of treatment programmes, universal parenting programmes have been developed; many present the same core parenting principles but their rationales vary from promoting children’s development to addressing common behavioural challenges and the evidence for these programmes is less well established. Most parents now have internet access and are making daily use of it, including seeking advice on parenting matters but that advice is often anecdotal and lacking evidence. In the meantime, a small number of web-based programmes, including parenting programmes have been developed and evaluated. This paper summarises the rationale for web-based universal programmes to support parents and briefly describes the history, content and a summary of the initial research on the COPING (confident parent internet guide) programme developed by the authors. The paper concludes with suggestions for future research directions.

**Keywords:** parenting; families; universal; web; evaluation

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## 1. Introduction

Young children spend a lot of time with their parents and, even when they spend time in day-care, time spent with parents still has the single most significant influence on their development [1]. Good parenting makes an important contribution to preventing child mental health problems, promoting child health and well-being and achieving good child outcomes [2,3]. For example, at age nine, children’s academic success is related to the number of words their parents were speaking to them at age three, with children exposed to restricted parental language during their preschool years having poor outcomes [4]. Good parenting includes a focus on encouraging positive behaviour, praising desirable behaviour, limit setting and teaching emotional regulation and problem-solving skills [5].

There are many risk factors for poor child outcomes particularly for disruptive behaviour difficulties, including poverty, young parenthood, single parenthood, maternal depression, unemployment and poor parental educational attainment [6]. However, it is the extent to which these risk factors compromise parenting that matters [7] rather than by direct influence on child behaviour and many randomised controlled trials (RCTs) have demonstrated the benefits of teaching positive parenting strategies to parents of children with behavioural difficulties [5,8] including with those families experiencing significant social disadvantage [9,10].

Many parents report challenges in raising children [11]. The past half-century has seen dramatic lifestyle changes, some of which have brought benefits, such as advances in medical treatment, better working conditions and improved communication, however others present challenges with increasing consumption of ready meals, increased obesity in both children and adults, lack of exercise, overexposure to screens and sleep deprivation. These changes include children spending much time indoors, playing on computers or watching television, often in their own rooms away from the company of adults, and spending little time playing outside [12].

Exposure to the key parenting skills that are included in targeted interventions may be of universal benefit for parents in general, providing them with evidence-based information that teaches the knowledge, skills and competencies that encourage positive child development, well-being and good academic outcomes [13,14]. Sanders and colleagues [15] defined the rationale for a universal population-level approach as promoting children's social, emotional, language, intellectual and behavioural competencies through positive parenting practices.

It is clear however that most well-evaluated programmes target parents of children with disrupted behaviour, reaching only small numbers of families and are not universally available [13,16–18]. Consequently, families that are not experiencing clinical difficulties with their children but who are seeking advice and information have little access to evidence-based information on parenting.

There are a number of potential advantages to offering universal parenting programmes. These include: (1) providing support for parents whose children do not have problems but who are concerned to parent their children in ways that provide them with the best outcomes; (2) facilitating access to evidence-based information for parents who are facing common everyday parenting challenges, but not currently in receipt of services; (3) impacting on societal norms by promoting positive parenting principles; and (4) supporting parents in encouraging positive child development.

Many universal parenting programmes are based on the same theoretical underpinnings as targeted/preventive programmes and teach the same positive parenting behaviours as programmes that address behavioural challenges. Some have shown promise [19,20] however often they have recruited samples reporting significant levels of child behaviour problems and have mostly been evaluated in terms of level of reduction in challenging child behaviour [2,20–22].

Some universal programmes include components that focus on enhancing child development (promoting linguistic and/or cognitive skills), others target reductions in common everyday behavioural problems and both have demonstrated promising positive outcomes [2,20,23]. However, universal parenting programmes in general have not yet been extensively researched [2] and there is relatively little evidence of their effectiveness. The UK government funded Early Intervention Foundation, that evaluates and publishes standards of evidence for programmes, says that there is, to date, only preliminary evidence of improved outcome from universal programmes and an assumption of causal impact cannot be drawn [24].

Health visitors in the UK are tasked with supporting all families of pre-school children, however growing demands on health visitors' time to support parents with children with challenging behaviour reduces their ability to support all parents at a time when parents are bringing up children in a rapidly changing world with additional challenges [12]. This leaves many parents without access to potentially good quality face to face advice when dealing with everyday parenting challenges so parents are turning to other sources of information.

Internet access is now widespread as a result of cheaper internet providers and its availability on mobile phones and tablets and growing numbers of people now access it on a daily basis [25]. The internet offers flexible access within the home [26,27]. The advantages of web-based programmes to target public health concerns include convenience, relatively low cost of dissemination, the ability to reach more individuals and a destigmatising method for people to access information [26,28]. It also provides the opportunity to incorporate behavioural principles (e.g., audio, video and feedback) to target both engagement and behaviour change [26,28]. Already, web-based interventions have been shown to be effective in promoting health related behaviours including smoking

cessation, hand washing, advice on eczema treatment, managing cancer related fatigue and weight reduction [29–33].

The internet is a fast-growing resource for modern-day parents and the majority of parents (75%) now use social media to obtain parent-related information [34]. In 2008, a yahoo search using the keyword ‘parenting’ found around 270,000,000 websites [35] and over eight million people visit one online parenting information and advice website every month [36]. The web provides an opportunity to introduce social learning theory-based parenting principles using the same principles in both content and programme delivery [37,38]. These include shaping and reinforcing behaviour, modelling skills and encouraging rehearsal of skills as well as prompting positive behaviour through practical assignments to be undertaken with children [38].

## 2. Evidence for Internet-Based Programmes

There is evidence of benefits following web-based parenting interventions [39]. However, high attrition rates have been reported [21,40] with many participants, particularly those reporting significant child behavioural challenges [41], starting but not completing programmes [27] and there is limited RCT evidence.

A recent systematic review of web-based parenting programmes [41] included programmes targeting the age range 0–18 years. Programmes had to be digital and to have been peer reviewed and not targeting a specific problem such as autism. Only 11 studies, published since 2000, met these criteria, reporting on seven interventions and nine delivery methods. Half or less of the studies had data for most of the comparisons. Only one study had an ethnically diverse population, four studies had middle income participants and two had low income parents with only 15% having less than high school education. Nine programmes described the method (six internet, two cd-rom, one a reality tv show) and eight provided content descriptions, all used video modelling, other content was delivered via text, narrated text, check in questions, and interactive activities. Six studies reported some additional human contact. The programmes ranged from 1–12 sessions in length and completion rates varied from 41–99.2%. Overall longer programmes had lower completion. Five studies reported high satisfaction and one reported low satisfaction. Five programmes also had individualised support but the study did not test its effect so it was not clear to what extent additional support might be helpful or for whom. Only four studies reported parent and child outcomes with overall effect sizes for child outcomes in terms of reductions of behaviour problems of .61 and for parent outcomes 0.46 and there was evidence for video modelling being helpful.

Conclusions from the review were tentative because of the varied programme lengths and wide age range and nothing could be concluded about low income/vulnerable families, ethnic minorities or the benefits of additional support.

## 3. The COPING Parent Online Universal Programme

In Wales we have been developing and evaluating a universal web-based programme, the Confident Parent Internet Guide (COPING) programme. To date we have undertaken a pilot trial [42] and a small RCT [43,44]. This paper describes the programme and summarises reported outcomes. The COPING parent programme is intended for parents of children aged 3–8 years with the aim of encouraging positive parenting and promoting positive child development and well-being. It is based on ‘The Little Parent Handbook’ [45] that contains a summary of social learning theory based positive parenting principles developed over many years from trials of targeted and preventive interventions [9,46–48]. COPING presents these evidence-based behavioural principles [37,49,50] associated with good child outcomes and also includes components that promote children’s development by encouraging language skills and teaching parents skills of prompting, shaping, modelling and reinforcing desirable behaviour [9,51].

The intervention has eight content and two revision chapters [43]. The topics are:

- i. Spending special time with your child through play

- ii. Encouraging good behaviour through praising
- iii. Encouraging good behaviour through rewarding
- iv. How to get better at giving instructions [part 1]
- v. How to get better at giving instructions [part 2]
- vi. Revision [a review of chapters 1–5]
- vii. Ignoring problem behaviour
- viii. Teaching your child new behaviours
- ix. How to develop your child's language skills
- x. Revision [a review of chapters 1–9]

The COPING programme incorporates core social learning theory principles [37] in its presentation, including modelling, prompting, and reinforcing desirable behaviour. The principles are introduced through video examples of positive parenting (modelling), parents are prompted to set and record achievable goals, achievement is monitored and reinforced by online feedback and multiple-choice quizzes which are reinforced with feedback for correct responses [43].

Parents are provided with a link to the website, a username and password and contact details of an administrator for any technical support needed. They are asked to log in and complete one chapter each week, each chapter takes approximately thirty minutes to complete. The software ensures that parents complete each chapter before they can move to the next one. Log in details allow parents to access the programme as many times as they wish. The intervention is programmed to take parents to the page that they last viewed on the next occasion that they log in. In order to give parents sufficient time to practice the principles outlined in the individual chapters, the intervention is programmed so that there is a minimum five-day gap between each chapter. If parents log in before the five days have elapsed, they are offered the opportunity to look back over previously completed chapters [43].

The programme enables the tracking of individual usage data including the number of log-ins, time spent on each page and the number of chapters completed. A text message is sent five days after the completion of each chapter informing the parent that the next chapter is now available. If the parent has not logged into the next chapter within three days of it becoming available, a reminder text is sent prompting them to log in and complete the next chapter. If a parent still has not logged in, weekly reminders are sent.

Parents read through information (or listen via an audio button if they prefer) and watch video examples of positive parenting. The video clips are short (all less than one minute long) allowing the opportunity for multiple viewing. At the end of each chapter there is a longer video and parents are asked to answer three questions based on it (by selecting yes or no) to encourage them to identify positive parenting behaviours. Each chapter ends with a multiple-choice quiz to test parents' knowledge and understanding of the key principles. Parents receive automated feedback on the correct answers, based on their quiz scores. They also have an option to download and print a summary sheet for each chapter [43].

Each chapter contains a suggested practice activity. The programme encourages parents to spend time playing with their child in order to strengthen their relationship, and they are reminded to engage in this activity throughout the programme. Parents can record online each week how many times they have played with their child from a drop-down menu. A praise message congratulates the parent for spending time with their child if they report spending time with their child. If parents do not report spending time with their child during the past week, a prompt message reminds them of the importance of this activity.

Minor modifications, made based on the feedback from the pilot trial [42], included text message prompting to remind parents to log-in to subsequent sessions, more video examples of positive parenting and the option to look back over previously completed chapters again. The revised programme was tested in a pilot RCT [43,44]. Although widely advertised through nurseries and health centres, and recruitment emphasised that this was a universal programme the sample was

mainly recruited by word of mouth, generally by health visitors and other professionals as opposed to the self-referred parents and consisted of predominantly affluent and well-educated parents [9,51,52].

Over 60% of parents who enrolled reported their child as scoring above the clinical cut-off on one or both of the Eyberg Child Behavior Inventory (a parent report inventory of challenging child behaviours) intensity and problem sub-scales [53] and over 40% of parents scored above the clinical cut off on the General Health Questionnaire (a screening tool for mental health difficulties in adults) [54]. Results from the Arnold et al. [55] parenting scale that identifies three aspects of problematic parenting showed that, in comparison to the mean scores of parents of children without behavioural problems, the mean sample scores were problematic on all three sub-scales. The subscales cover laxness (failure to set limits), verbosity (repeating threats but not following through) and over-reactivity (anger).

The programme was evaluated mainly through observation of parent-child interactions using the well-established Dyadic Parent-child Interaction Coding Scheme (DPICS) [56]. Immediate post-intervention data showed significant reductions in observed indirect (or poor quality) commands and significant increases in observed praise relative to control participants with medium-large effect sizes. There were also non-significant reductions in parent reported child problem behaviours that showed medium effect size differences. Significant intervention improvements were also found at six-months post intervention for observed indirect commands, observed praise and observed negative parenting and parent reported child and parent behaviour [44].

Programme engagement was variable and, like other web-based studies, completion rates were poor [41]. Parents who were recruited but did not engage at all with the programme were experiencing more mental health problems compared with parents who engaged and parents lost at follow-up were more likely to have a lower level of education and be younger parents [44]. Nevertheless, these preliminary results suggest the value of further developing and testing of the COPING programme and this has been supported by a small grant from the Welsh Government to enable the transfer of the programme to enable access via an App. One local Authority in Wales is now working with us to further pilot the programme and we are seeking further funds to take this work forward. In a separate study we have developed a web-based programme for school support staff that is similar but uses classroom-based videos and this too has demonstrated feasibility and some indication of positive outcomes [57].

#### 4. Discussion

Teaching parents positive parenting skills promotes child health and well-being and prevents child mental health problems [2,3]. Universal parenting programmes are designed to provide parents with evidence-based knowledge and skills to promote children's social, emotional, and language skills [13,14]. However, there is a lack of research regarding their effectiveness [2]. The web provides a platform to teach positive parenting skills to more parents at a relatively low cost [26,28] and there is some supporting evidence [39,41]. COPING is a web-based universal parent programme developed and evaluated in Wales. Initial evidence is promising with significant improvements in parenting and child behaviour [44].

At present many programmes, including our own, have tended to recruit significant numbers of parents reporting high levels of behavioural problems in their children [20–22]. Such parents, however, are more likely to fail to engage or complete the programme [41], suggesting that programmes may need different content and/or additional therapist support to be effective for these parents.

Although other factors such as stigma may prevent some parents from seeking help from professionals, the extent to which parents of high challenge children are enrolling on web-based programmes [2,20–22] also suggests that there are insufficient targeted services for these parents. Parents are turning to the web to get parenting advice which highlights the need for evidence based or informed programmes to address the recruitment of universal populations. Despite our efforts to recruit with flyers through nurseries this had only limited success and our own study recruited

predominantly by word of mouth and referral by health visitors. Other recruitment strategies need to be explored in future studies.

Programme engagement is a common problem for universal parenting programmes [27,41] and our own research was no exception. Almost half the participants either only completed the first chapter or did not log in to the programme at all. This may be due to the lack of prompting of participants between sessions. Text message prompts were programmed into the COPING programme to be sent to parents, however this did not happen due to technical difficulties. Since parents had to wait five days between each chapter, and the text messages did not work, it is possible that the low engagement is due to parents forgetting to log in to the next chapter. Studies who have provided prompts to parents to remind them to complete sessions show better rates of engagement [21], therefore the addition of prompts in further trials may increase engagement rates.

Most of the trials of web-based programmes to date, including our own, have had small numbers of participants meaning that it is not possible to explore the relative effectiveness of the programme for parents of children with clinical levels of behaviour problems versus children with non-clinical levels. Programmes need to be clear regarding intended populations, goals and outcomes.

Other components of COPING require evaluation for example the requirement to wait five days before being able to log on to the next chapter. Whilst this was designed to allow time for parents to practice the chapter content before moving on, which is essential for learning new skills [38], for a universal audience this may not be essential. The ability to 'skip' content to get to information that is personally relevant to them may contribute to increased engagement since parents do not have to work through sessions that are irrelevant to their situation. The effect of the extent of control over parents' pacing through programmes is an under-researched area [41] and needs further evaluation.

## 5. Conclusions

Preliminary evidence, from both our own and other programmes, suggests that web-based parenting support is beneficial. However, the goals and outcome measures used in universal programmes vary with some evaluating reductions in common behaviour problems and other targeting the promotion of child developmental outcomes such as language expression and comprehension and cognitive stimulation.

Stand-alone universal parenting programmes, without therapist support, can address the growing need for many parents to access evidence-based parenting advice on minor frequently occurring problems and promote children's healthy development, wellbeing and linguistic and cognitive development [58]. However, programmes need to explore whether the needs of parents reporting high levels of challenging child behaviour can also be met with stand-alone programmes or whether more support is needed and/or whether content needs to be different for such parents. This requires studies that have larger samples to explore differential effectiveness.

There is strong evidence for the benefits of teaching developmentally appropriate core behavioural principles to parents [59]. More work needs to be done on recruitment and to establish the content and delivery style components that are effective for parents with differing needs. Trials need larger numbers to address these issues and to be able to explore for whom which programmes work best and when, and for whom, additional off-line support is needed to encourage programme completion. Much of the advice obtained online by parents currently lacks evidence. Web-based programmes can provide evidence-based parenting support to address the growing universal demand for parenting advice.

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